FILE NO.

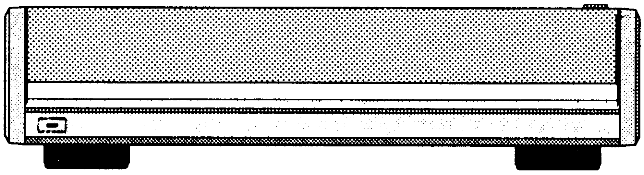
SANYO

SERVICE MANUAL

Video Cassette Recorder

GVR-S960
(Europe)

GVR-P07 (Option)
GVR-P04 (Option)



S VHS 625 VHS PAL

PRODUCT SAFETY NOTICE

The components designated by a symbol (⚠) in this schematic diagram designates components whose value are of special significance to product safety.
Should any component designated by a symbol need to be replaced. use only the part designated in the Parts List.
Do not deviate from the resistance, wattage and voltage ratings shown.

NOTE: 1. Parts order must contain model number, part number, and description.
2. Substitute parts may be supplied as the service parts.
3. N.S.P. : Not avasilable as service parts.

Design and specifications are subject to change without notice.

HP4QS/G2	143 139 08
TBC/G	151 001 22
CONTR/G	151 001 24

REFERENCE No.SM531468

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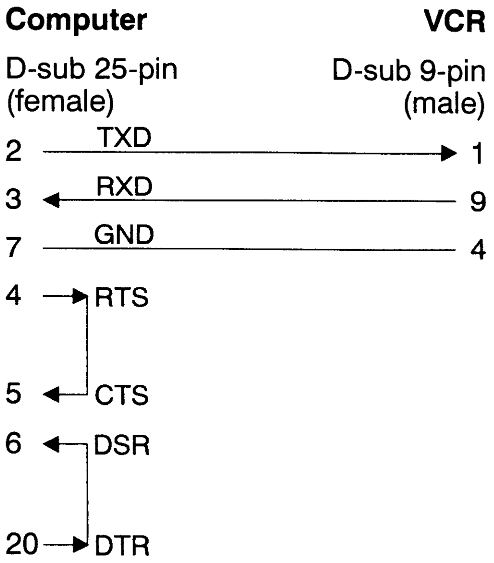
1. SYSTEM CONNECTIONS

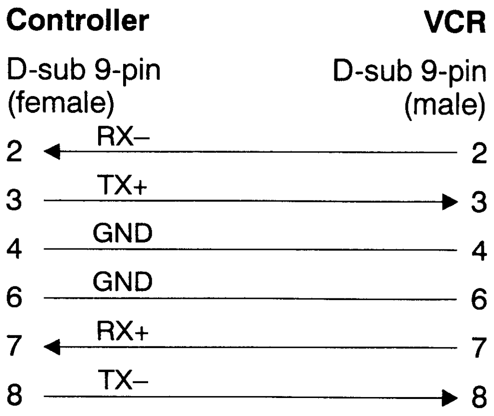
Operations involving system connections cannot be conducted unless the optional control unit (GVR-P07) is installed in the VCR.

Connections for Computer Animations

RS-232C control cable diagram


Computer
VCR
D-sub 25-pin (female)
D-sub 9-pin (male)
2 TXD 1
3 RXD 9
7 GND 4
4 RTS
5 CTS
6 DSR
20 DTR

RS-422A control cable diagram


Controller
VCR
D-sub 9-pin (female)
D-sub 9-pin (male)
2 RX– 2
3 TX+ 3
4 GND 4
6 GND 6
7 RX+ 7
8 TX– 8

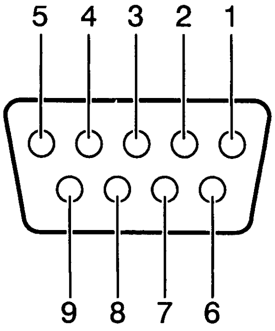
Pin Configuration

VCR pins

GPI connector

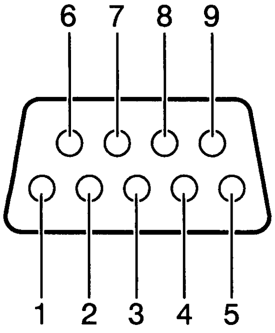
D-sub 9-pin (female)

1	FRAME GRAB
2	GND
3	GPI IN
4	GND
5	GPI OUT
6	GND
7	N/C
8	N/C
9	N/C

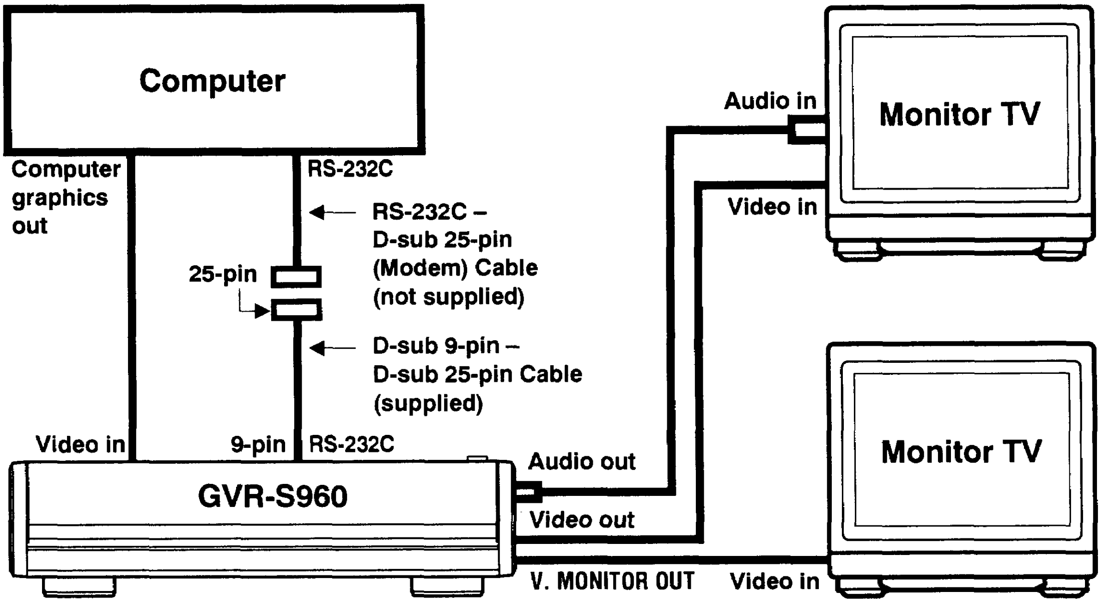


RS-422A and RS-232C connectors

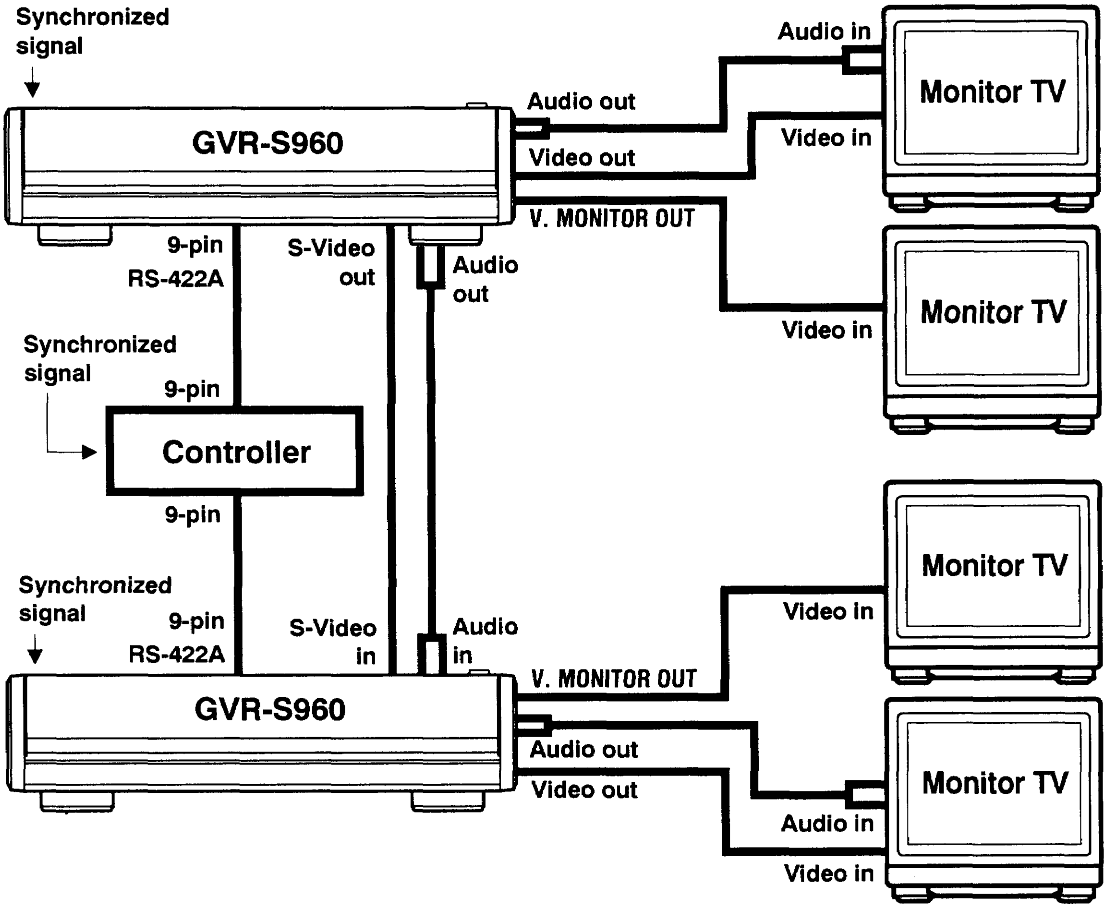
D-sub 9-pin (female)



Connections for Animation


Computer
Computer graphics out
RS-232C
RS-232C – D-sub 25-pin (Modem) Cable (not supplied)
25-pin
D-sub 9-pin – D-sub 25-pin Cable (supplied)
Video in
9-pin
RS-232C
GVR-S960
Audio out
Video out
V. MONITOR OUT
Audio in
Video in
Monitor TV
Monitor TV
Video in

Connections for Editing


Synchronized signal
GVR-S960
Audio out
Video out
V. MONITOR OUT
Audio in
Video in
Monitor TV
Video in
Monitor TV
9-pin
RS-422A
S-Video out
Audio out
Synchronized signal
9-pin
Controller
9-pin
Synchronized signal
9-pin
RS-422A
S-Video in
Audio in
GVR-S960
V. MONITOR OUT
Audio out
Video out
Monitor TV
Video in
Monitor TV
Audio in
Video in

2. MECHANISM DISMANTLING AND REASSEMBLING

2-1. MECHANISM MAIN UNIT (See Fig. 2-1-1.)

1. Removal

1) Remove the connectors of the COMPL MC-3 and the COMPL MOUNTING HEAD.
2) Remove the flexible cable ① connecting the COMPL CYLINDER to the COMPL VP-1 ③. (See Fig. A.)
3) Remove the two screws ②, then remove the COMPL VP-1 ③.
4) Remove the screw ④, then remove the PRE-AMP BRACKET ⑤.
5) Remove the two screws ⑥.
6) Remove the two screws ⑦ and three screws ⑩, then lift up the mechanism main unit and remove it.
   Since the TRAY ⑧ obstructs removal of the two front screws ⑩, move the TRAY LOCK LEVER ⑨ in the direction shown by the arrow to unlock the tray, then slide off the TRAY ⑧ before removing the screws. (See Fig. B.)

Note: The shape of the COMPL VP-1 ③ and the PRE-AMP BRACKET ⑤ differ depending on the model.

2. Remounting

1) Mount the mechanism main unit onto the chassis with the three screws ⑦ and two screws ⑩.
2) Tighten the two screws ⑥.
3) Mount the PRE-AMP BRACKET ⑤ with the two screws ④.
4) Mount the COMPL VP-1 ③ and the ground lug with the two screws ②. (Some models are not provided with a ground lug.)
5) Insert the flexible cable ① into the connector of the COMPL VP-1.
6) Connect the connectors of the COMPL MC-3 and the COMPL MOUNTING HEAD.

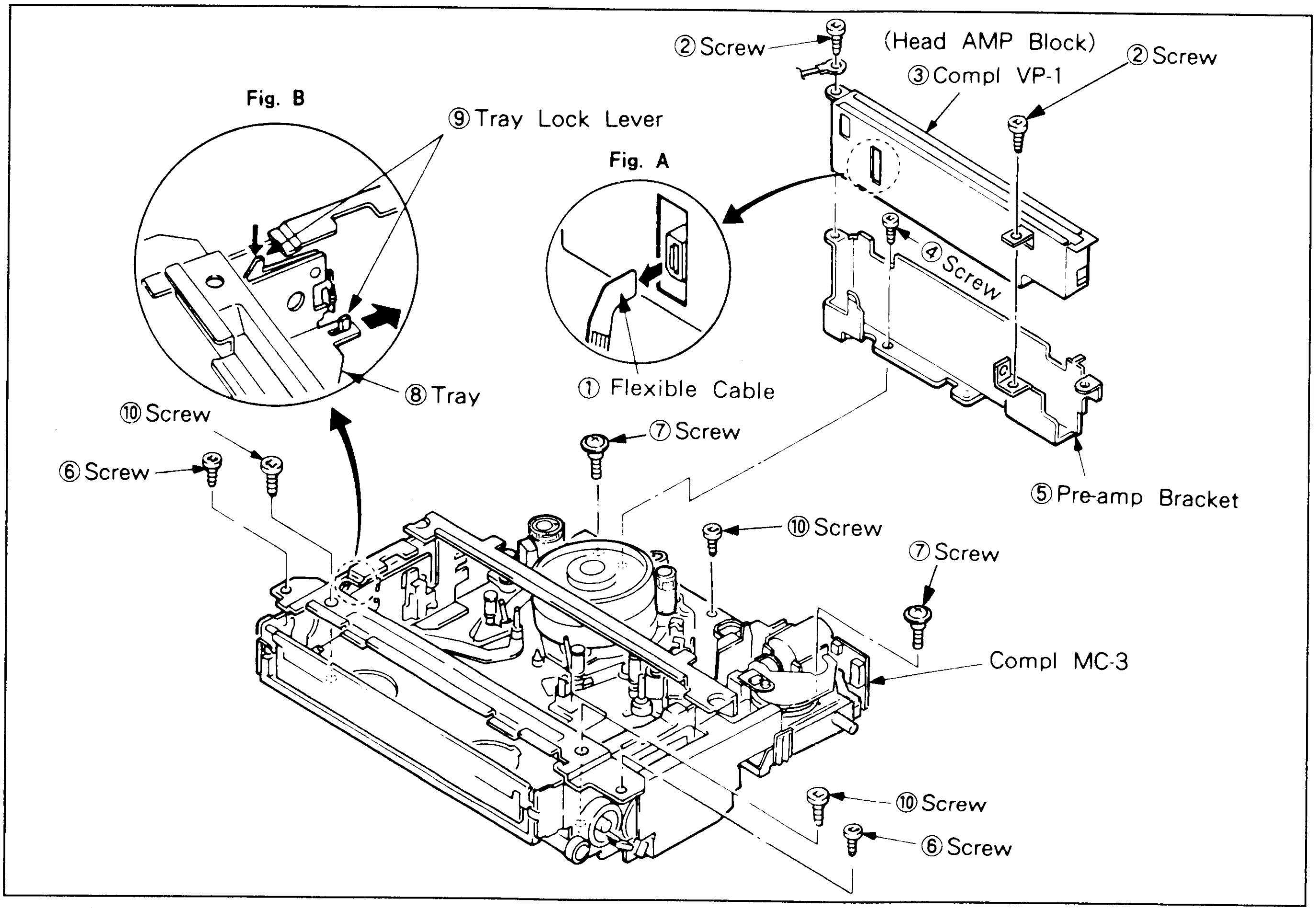

② Screw
(Head AMP Block)
③ Compl VP-1
② Screw
Fig. B
⑨ Tray Lock Lever
Fig. A
④ Screw
⑧ Tray
① Flexible Cable
⑩ Screw
⑥ Screw
⑦ Screw
⑤ Pre-amp Bracket
⑩ Screw
⑦ Screw
Compl MC-3
⑩ Screw
⑥ Screw

Fig. 2-1-1. Mechanism Main Unit

2-2. CASSETTE MECHANISM ASS'Y

2-2-1. CASSETTE MECHANISM (See Fig. 2-2-1.)

1. Removal

1) Set the video main unit to the EJECT completed mode.
2) Pull out the connectors (6-PIN CONNECTOR connected to the system control circuit board, ACE HEAD CONNECTOR, and FTE HEAD CONNECTOR) from the CASSETTE HOLDER.
3) Remove the two screws ①.
4) Remove the two screws ②.
5) Lift up the COMPL CASSETTE MECHANISM ④, push it back a little, and remove the two hooks ③ on the front. (See Fig. B.) When doing so, be sure that the SAFETY SWITCH LEVER is not caught by the mechanism chassis.

2. Remounting

1) Set the chassis section mechanism to the EJECT mode with the mode selector (VHJ-0050) (looking from the top, align the EJECT mode positioning alignment hole ⑤ with the MOTOR HOLDER hole ⑥ as shown in Fig. A).
2) Set the COMPL CASSETTE MECHANISM ④ to the EJECT completed mode.
3) Mount the COMPL CASSETTE MECHANISM ④ onto the mechanism chassis, aligning it with the protuberance.
   Align the EJECT mode positioning alignment mark ⑧ to the △ positioning alignment mark ⑦. (See Fig. A.)
4) Attach to the mechanism chassis with the two screws ②.
5) Attach to the chassis with the two screws ①.
6) Connect the various connectors.

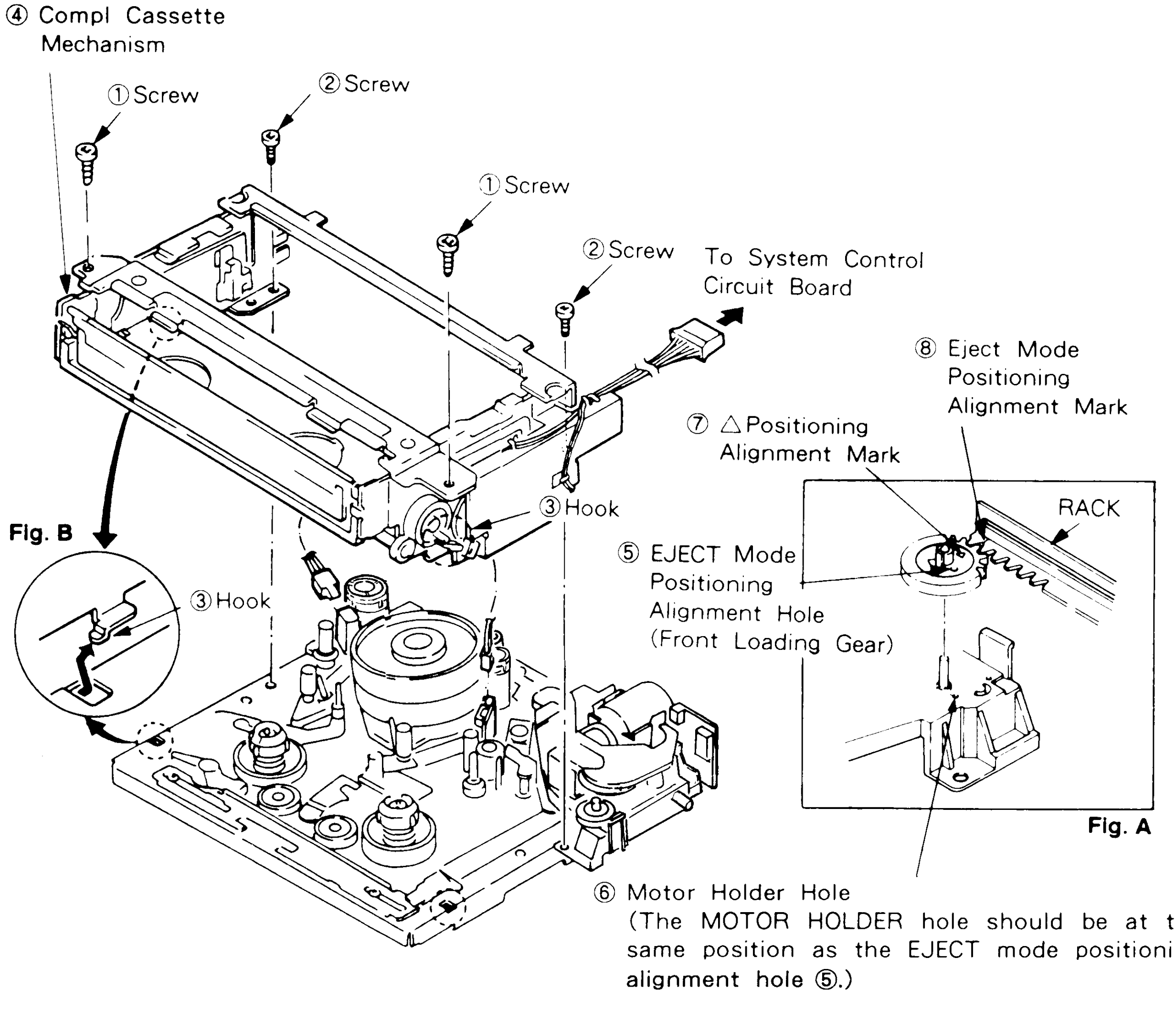

④ Compl Cassette Mechanism
① Screw
② Screw
① Screw
② Screw
To System Control Circuit Board
⑧ Eject Mode Positioning Alignment Mark
⑦ △Positioning Alignment Mark
RACK
③ Hook
Fig. B
③ Hook
⑤ EJECT Mode Positioning Alignment Hole (Front Loading Gear)
Fig. A
⑥ Motor Holder Hole
(The MOTOR HOLDER hole should be at the same position as the EJECT mode positioning alignment hole ⑤.)

Fig. 2-2-1. Cassette Mechanism

2-2-2. GEAR BRACKET ASS'Y (See Fig. 2-2-2.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the three screws ①, then remove the GEAR BRACKET ASS'Y ② as shown in Fig. A.
3) Remove the E-ring ③, then remove the LOCK GEAR ④, the PINION LEVER ASS'Y ⑤, the PINION GEAR ⑥, and the RACK ⑦, in that order.

2. Remounting

1) Apply grease to the shaft ⑧ and the two pins ⑨ of the GEAR BRACKET ASS'Y.
2) Apply grease to the pin ⑩ of the PINION LEVER ASS'Y.
3) Apply grease to the toothed part of the RACK ⑦.
4) Fit the RACK ⑦ onto the two pins ⑨. Align the positioning alignment hole ⑪ with the positioning alignment hole ⑫ of the GEAR BRACKET.
5) Mount the PINION GEAR ⑥, PINION LEVER ASS'Y ⑤, and LOCK GEAR ④ in the shaft ⑧ in the order mentioned.
   Align the positioning alignment holes ⑬ of the PINION GEAR and the LOCK GEAR with the positioning alignment hole ⑪ of the RACK at the same time.
6) Mount the E-ring ③ onto the shaft ⑧.
7) Set the GEAR BRACKET ASS'Y ② onto the dowel and mount it using three screws ①.
   Align the positioning alignment hole Ⓐ of the IDLER GEAR with the positioning alignment hole Ⓑ of the SIDE BOARD as shown in Fig. 2-2-3 at this time.
   Also align the positioning alignment holes ⑬ of the PINION GEAR and the LOCK GEAR with the positioning alignment hole ⑫ of the GEAR BRACKET by referring to Fig. 2-2-2. After mounting them, check to be sure that the FL START SWITCH ⑭ is in the ON position as shown in Fig. A.
8) Remount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

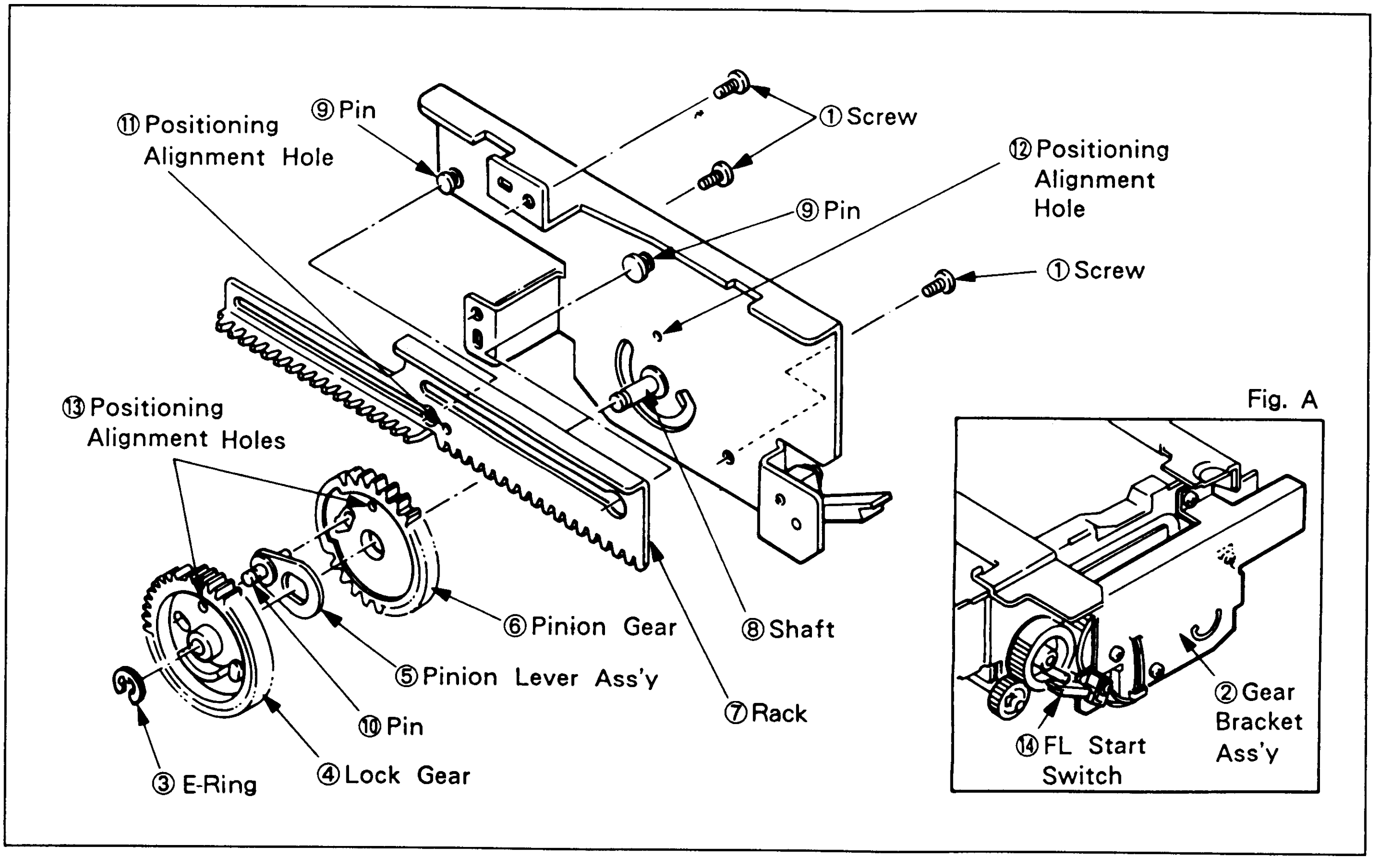

⑪ Positioning Alignment Hole
⑨ Pin
① Screw
⑫ Positioning Alignment Hole
⑨ Pin
① Screw
⑬ Positioning Alignment Holes
⑥ Pinion Gear
⑧ Shaft
⑤ Pinion Lever Ass'y
⑦ Rack
⑩ Pin
③ E-Ring
④ Lock Gear
Fig. A
② Gear Bracket Ass'y
⑭ FL Start Switch

Fig. 2-2-2. Gear Bracket Ass'y

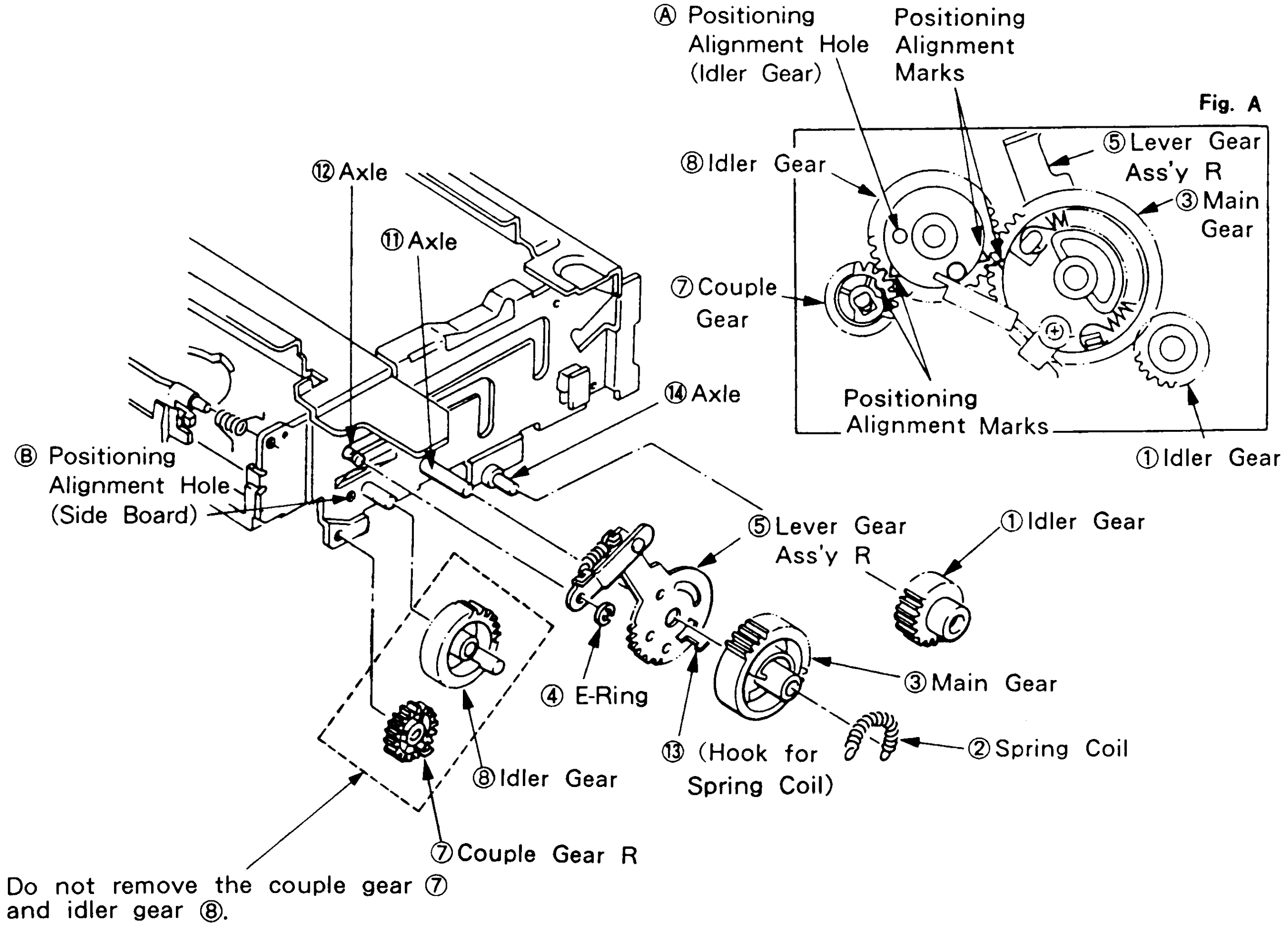
2-2-3. CASSETTE DRIVE GEAR (RIGHT) (See Fig. 2-2-3.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM and the GEAR BRACKET ASS'Y as instructed in Sections 2-2-1 and 2-2-2, respectively.
2) Remove the IDLER GEAR ①.
3) Remove the SPRING COIL ②, then remove the MAIN GEAR ③.
4) Remove the E-ring ④, then remove the LEVER GEAR ASS'Y R ⑤.

2. Remounting

1) Apply grease to the gear parts that undergo friction.
2) Align the positioning alignment hole Ⓐ of the IDLER GEAR ⑧ with the positioning alignment hole Ⓑ of the SIDE BOARD.
3) Mount the LEVER GEAR ASS'Y R ⑤ onto the axles ⑪ and ⑫. Align with the IDLER GEAR ⑧ as shown in Fig. A.
4) Mount the E-ring ④ onto the axle ⑫.
5) Mount the MAIN GEAR ③ onto the axle ⑪. When doing so, align it with the IDLER GEAR ⑧ as shown in Fig. A.
6) Hook the SPRING COIL ② to the notch ⑬ in the MAIN GEAR ③ and the LEVER GEAR ASS'Y R.
7) Mount the IDLER GEAR ① onto the axle ⑭. When doing so, align it with the MAIN GEAR as shown in Fig. A.
8) Mount the GEAR BRACKET ASS'Y and the COMPL CASSETTE MECHANISM as instructed in Sections 2-2-2 and 2-2-1, respectively.


Ⓐ Positioning Alignment Hole (Idler Gear)
Positioning Alignment Marks
Fig. A
⑤ Lever Gear Ass'y R
③ Main Gear
⑧ Idler Gear
⑦ Couple Gear
Positioning Alignment Marks
① Idler Gear
⑫ Axle
⑪ Axle
⑭ Axle
Ⓑ Positioning Alignment Hole (Side Board)
⑤ Lever Gear Ass'y R
① Idler Gear
③ Main Gear
④ E-Ring
② Spring Coil
⑬ (Hook for Spring Coil)
⑧ Idler Gear
⑦ Couple Gear R

Do not remove the couple gear ⑦ and idler gear ⑧.

Fig. 2-2-3. Cassette Drive Gears (Right Side)

2-2-4. CASSETTE DRIVE GEAR (LEFT) (See Fig. 2-2-4.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in 2-2-1.
2) Remove the E-ring ②.
3) Open the hook ③, then remove the LEVER GEAR ASS'Y L ④. Be careful not to open the hook ③ too much because it may bend or break. If it does, replace it.
4) Remove the SPRING COIL ⑤ from the LEVER GEAR ASS'Y L ④.

2. Remounting

1) Apply grease to the axle ⑨ and shaft ⑩.
2) Align the COUPLE GEAR L ⑬ and the IDLER GEAR L ⑥ as shown in Fig B.
3) Hook the SPRING COIL ⑤ to the LEVER GEAR ASS'Y L ④.
4) Mount the LEVER GEAR ASS'Y L ④ onto the axle ⑨ and the shaft ⑩. Align with the IDLER GEAR L ⑥ as shown in Fig. B.
5) Mount the COMPL CASSETTE MECHANISM onto the chassis as instructed in Section 2-2-1.

Note: The end of the DOOR OPEN LEVER ⑦ leans against the front side of the CASSETTE DOOR ⑪ as shown in Fig. A.

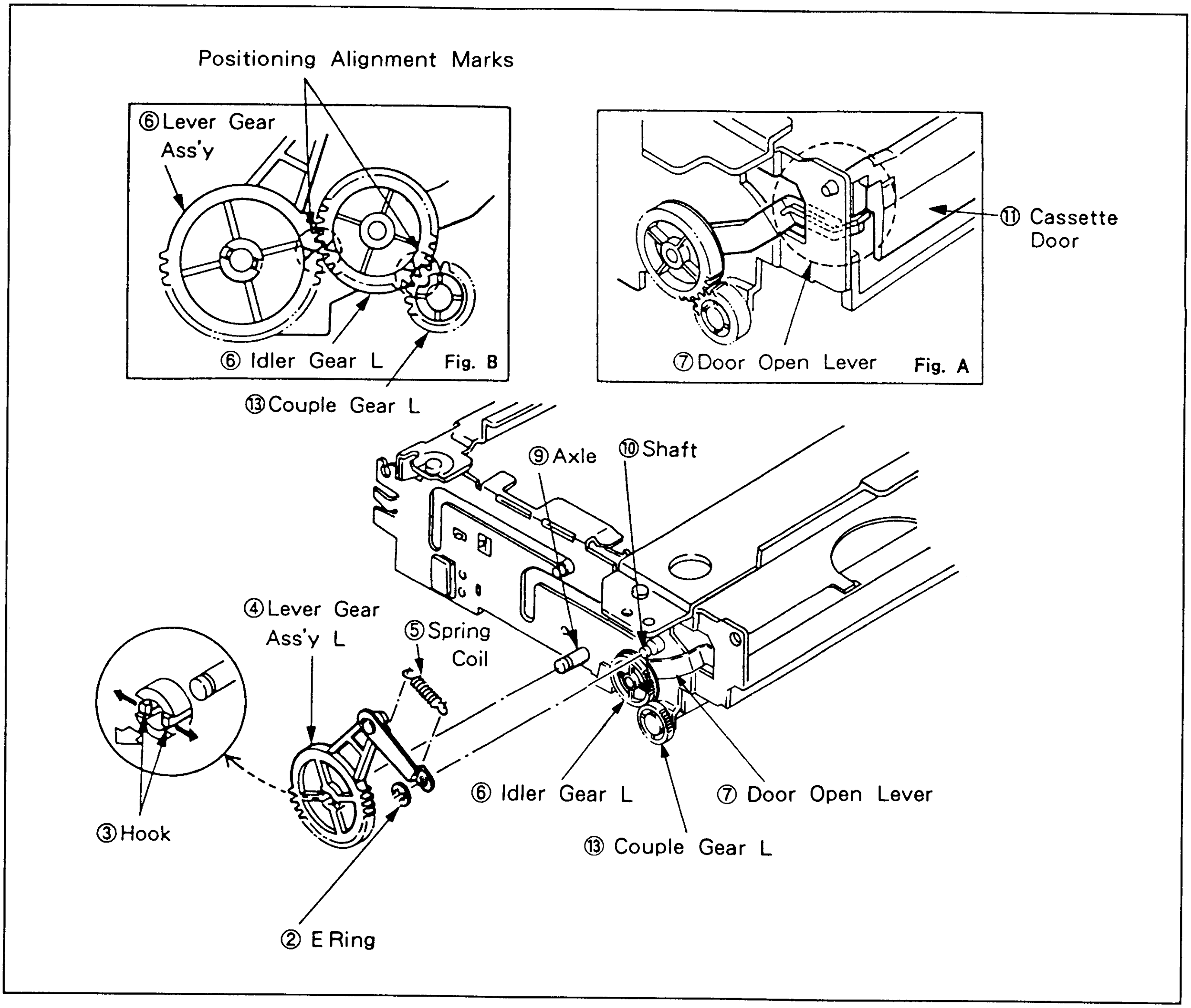

Positioning Alignment Marks
⑥Lever Gear Ass'y
⑥ Idler Gear L
Fig. B
⑬Couple Gear L
⑪ Cassette Door
⑦Door Open Lever
Fig. A
⑨Axle
⑩Shaft
④Lever Gear Ass'y L
⑤Spring Coil
③Hook
⑥ Idler Gear L
⑦ Door Open Lever
⑬ Couple Gear L
② E Ring

Fig. 2-2-4. **Cassette Drive Gears (Left Side)**

2-2-5. FL START SWITCH (See Fig. 2-2-5.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the screw ①.
3) Remove the lead wire of the FL START SWITCH ②.

2. Remounting

1) Solder the lead wire to the FL START SWITCH ② terminal.
2) Align the FL START SWITCH ② protuberance to the hole ⑤, then mount it onto the GEAR BRACKET ASS'Y ③ with the screw ①. Do it so that the FL START SWITCH ② is turned ON by holding the pin ④ of the IDLER GEAR in the EJECT completed mode.
3) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

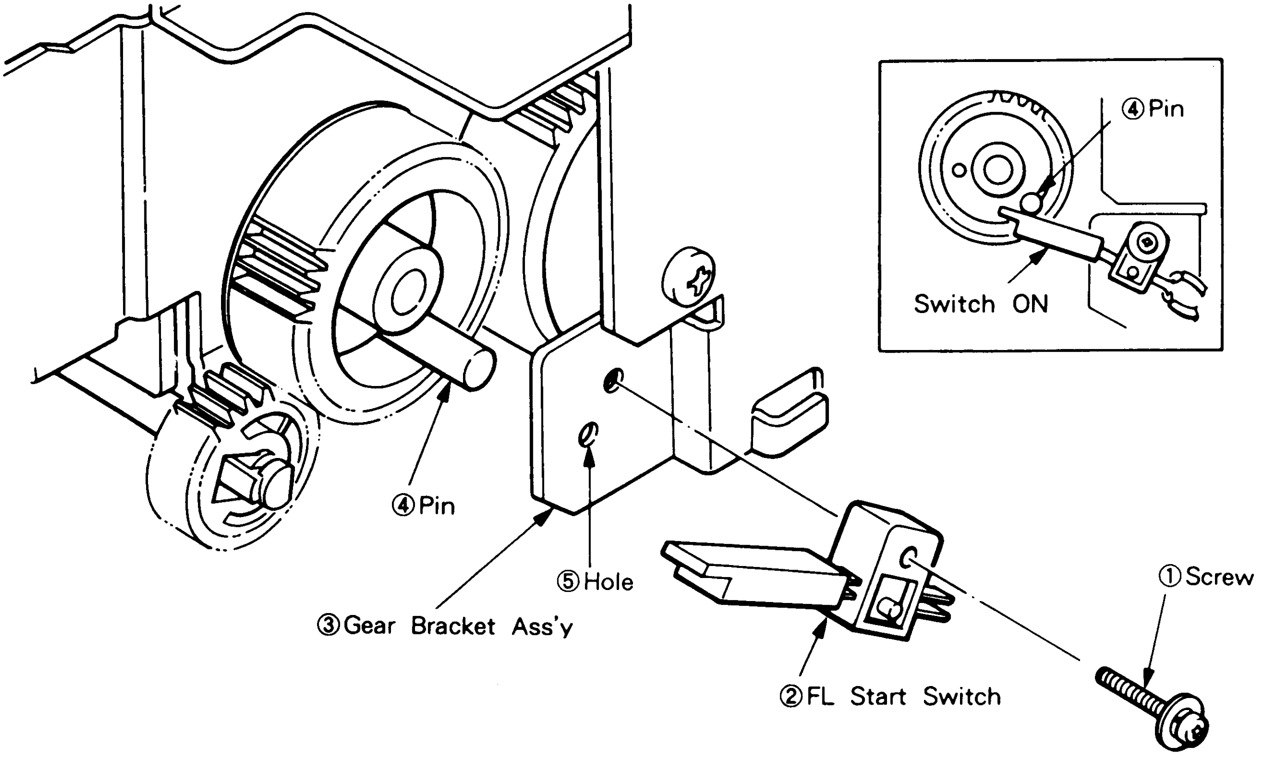

④Pin
Switch ON
④Pin
⑤Hole
③Gear Bracket Ass'y
①Screw
②FL Start Switch

Fig. 2-2-5. FL Start Switch

2-2-6. T-TOP SENSOR, T-END SENSOR (See Fig. 2-2-6.)

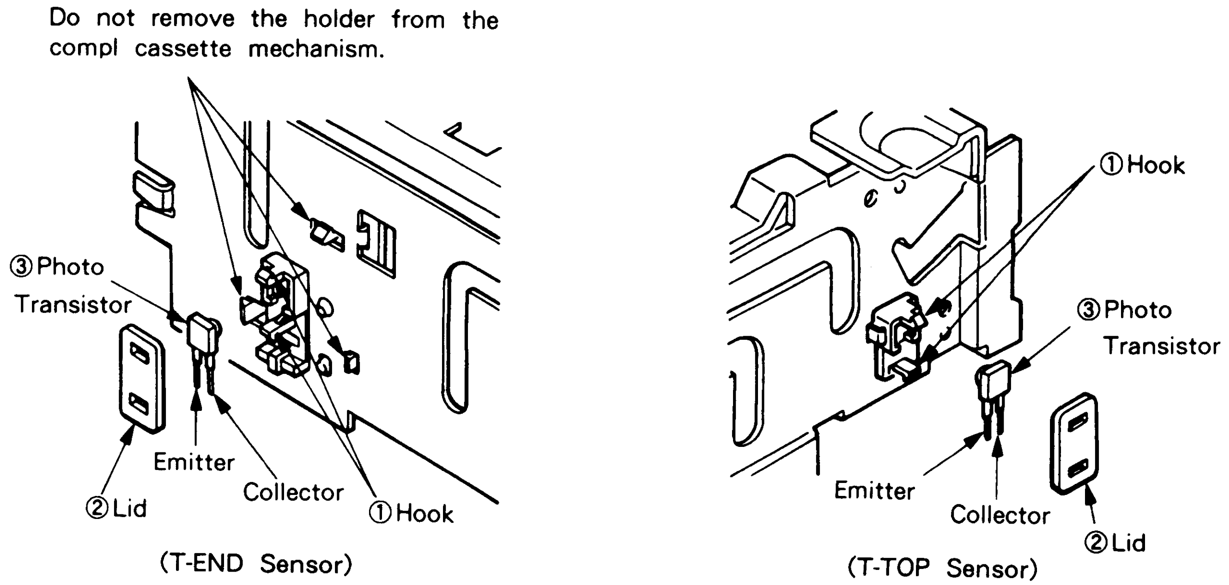
1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) When removing the T-TOP SENSOR, remove the GEAR BRACKET ASS'Y as instructed in Section 2-2-2.
3) Unhook the hook ① as instructed in Fig. A, then remove the LID ②. Be careful not to push the hook ① too much because it may bend or break.
4) Remove the photo transistors ③, then remove the lead wires.

Note: The mounting position of the transistor holder on the T-END SENSOR side is precisely adjusted at the factory, so never remove it from the COMPL CASSETTE MECHANISM.

2. Remounting

1) Solder the brown lead wire to the emitter side, and the red lead wire to the collector side of the T-TOP SENSOR photo transistor ③.
   Solder the orange lead wire to the emitter side, and the yellow lead wire to the collector side of the T-END SENSOR photo transistor.
2) Mount the photo transistors ③ onto their respective holders.
3) Mount the LID ② and secure it with the hook ①.
4) Mount the GEAR BRACKET ASS'Y as instructed in Section 2-2-2.
5) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.


Do not remove the holder from the compl cassette mechanism.
③Photo Transistor
Emitter
Collector
②Lid
①Hook
①Hook
③Photo Transistor
Emitter
Collector
②Lid

(T-END Sensor)

(T-TOP Sensor)

Fig. A

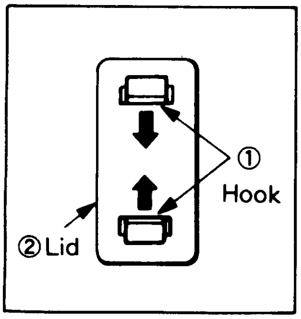


Fig. 2-2-6. T-TOP Sensor and T-END Sensor

2-3. COMPL MOTOR BRACKET (LOADING MOTOR BLOCK)

2-3-1. COMPL MOTOR BRACKET

1. Removal

1) Remove the COMPL VP-1 and the PRE-AMP BRACKET as instructed in Section 2-1.
2) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
3) Remove the two screws ① and the other one ⑩, then remove the COMPL MOTOR BRACKET ②. (See Fig. 2-3-1.)

2. Remounting

1) Set the mechanism chassis to the INITIAL mode. In this mode, look at the mechanism chassis INITIAL mode positioning alignment holes ③ from above and align the MAIN CAM ④ and the MODE CAM ⑤ INITIAL mode positioning alignment holes as shown in Fig. A.
2) Set the COMPL MOTOR BRACKET ② to the INITIAL mode with the mode selector (VHJ-0050). In this position, the FRONT LOADING GEAR △ positioning alignment mark ⑥ is aligned with the COMPL MOTOR BRACKET INITIAL mode positioning alignment mark ⑦. (See Fig. B.)
3) Align the ROTARY SWITCH (mode detector switch) ⑧ with the INITIAL mode positioning alignment mark ⑨. (See Fig. C.)
4) Line up the COMPL MOTOR BRACKET ② with the PROTUBERANCE ⑪ and the POSITIONING ALIGNMENT HOLE ⑫, and attach with two screws ① and one screw ⑩. (Refer to Fig. 2-3-1.)
5) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
6) Mount the COMPL VP-1 and the PRE-AMP BRACKET as instructed in Section 2-1.

Note: Normal mechanism operation cannot be achieved if INITIAL mode positioning of the MAIN CAM ④, the MODE CAM ⑤, and the ROTARY SWITCH (mode detector switch) ⑧ are not done precisely.

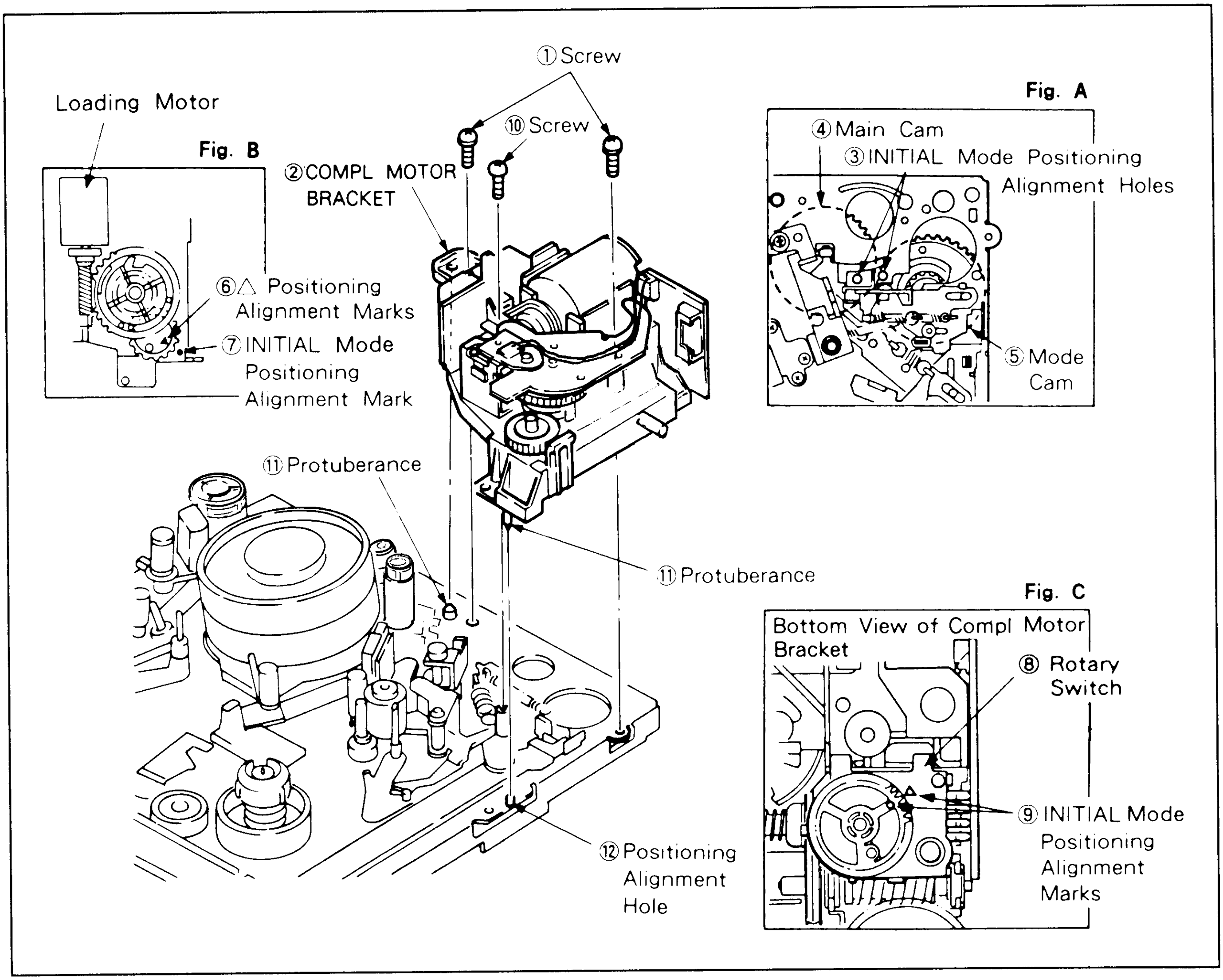

① Screw
Loading Motor
Fig. B
⑩ Screw
② COMPL MOTOR BRACKET
⑥△ Positioning Alignment Marks
⑦ INITIAL Mode Positioning Alignment Mark
⑪ Protuberance
Fig. A
④ Main Cam
③ INITIAL Mode Positioning Alignment Holes
⑤ Mode Cam
⑪ Protuberance
Fig. C
Bottom View of Compl Motor Bracket
⑧ Rotary Switch
⑨ INITIAL Mode Positioning Alignment Marks
⑫ Positioning Alignment Hole

Fig. 2-3-1. Compl Motor Bracket

2-3-2. LOADING MOTOR (See Fig. 2-3-2.)

1. Removal

1) Use the MODE SELECTOR (VHJ-0050) to set the mechanism to the INITIAL mode.
2) Pull out the connector for DEW SENSOR ㉕ connected to the MC-3 board ①.
3) Remove the three screws ② and remove the HOLDER BRACKET ④ with the FRONT WORM ASS'Y ③ still attached.
4) Remove the DAMPER ⑥ attached to the pulley of the LOADING MOTOR ⑤.
5) Remove the FRONT HELICAL GEAR ⑦.
6) Remove the soldered LEAD WIRE from the terminal of the LOADING MOTOR ⑤.
7) Remove the LOADING BELT ⑨.
8) Remove the LOADING MOTOR ⑤ by lifting it up from the back.

2. Remounting

Before attaching the LOADING MOTOR ⑤ to the MOTOR HOLDER ⑩, confirm that the DAMPER ⑪ and the DAMPER ⑫ shown in Fig. 2-3-2 are in the proper position on the MOTOR HOLDER ⑩.

1) The LOADING MOTOR ⑤ puts the protuberance ㉓ in the slit ㉔ of the MOTOR HOLDER ⑩. Further, mount the tap hole ⑬ at two points on the front pulley side so that it is secured to the PROTUBERANCE ⑭ of the MOTOR HOLDER at two points.
2) Solder the lead wire from the MC-3 board to the LOADING MOTOR ⑤ terminal. (Solder the red lead wire to the positive terminal side.)
3) Hang the LOADING BELT ⑨ on the pulley.
4) After hanging the LOADING BELT ⑨ on the pulley, confirm that the mechanism unit is in the INITIAL mode. The INITIAL mode is indicated by Fig. A in Fig. 2-3-2, and is the position in which INITIAL mode positioning alignment holes of the MAIN CAM ⑮ and MODE CAM ⑯ are lined up with the THROUGH HOLE ⑰ of the MOTOR HOLDER. If the INITIAL mode is not selected, use the MODE SELECTOR (VHJ-0050) to make the required adjustment.
5) As shown in Fig. B, confirm the positions of the △ INITIAL mode positioning alignment mark ⑱ on the FRONT LOAD GEAR and the INITIAL mode positioning alignment mark ⑲ of the MOTOR HOLDER, as well as the position relationship of the RACK ⑳.
6) Apply a light coat of grease to all sides of the AXLE ㉑ and the FRONT HELICAL GEAR ⑦.
7) Attach the FRONT HELICAL GEAR ⑦ to the AXLE ㉑. As shown in Fig. C, the FRONT HELICAL GEAR ⑦ is attached so that the indent on the side is inside the PIN ㉒ of the FRONT LEVER ASS'Y.
8) Attach the DAMPER ⑥ to the LOADING MOTOR ⑤ pulley.
9) The HOLDER BRACKET ④ is attached by engaging the FRONT WORM ASS'Y ③ with the LOADING MOTOR ⑤ pulley, and held in place with three screws ②.
10) Connect the connector of the DEW SENSOR ㉕ to the COMPL MC-3 ①, and return the mechanism to the eject mode completion position using the MODE SELECTOR.

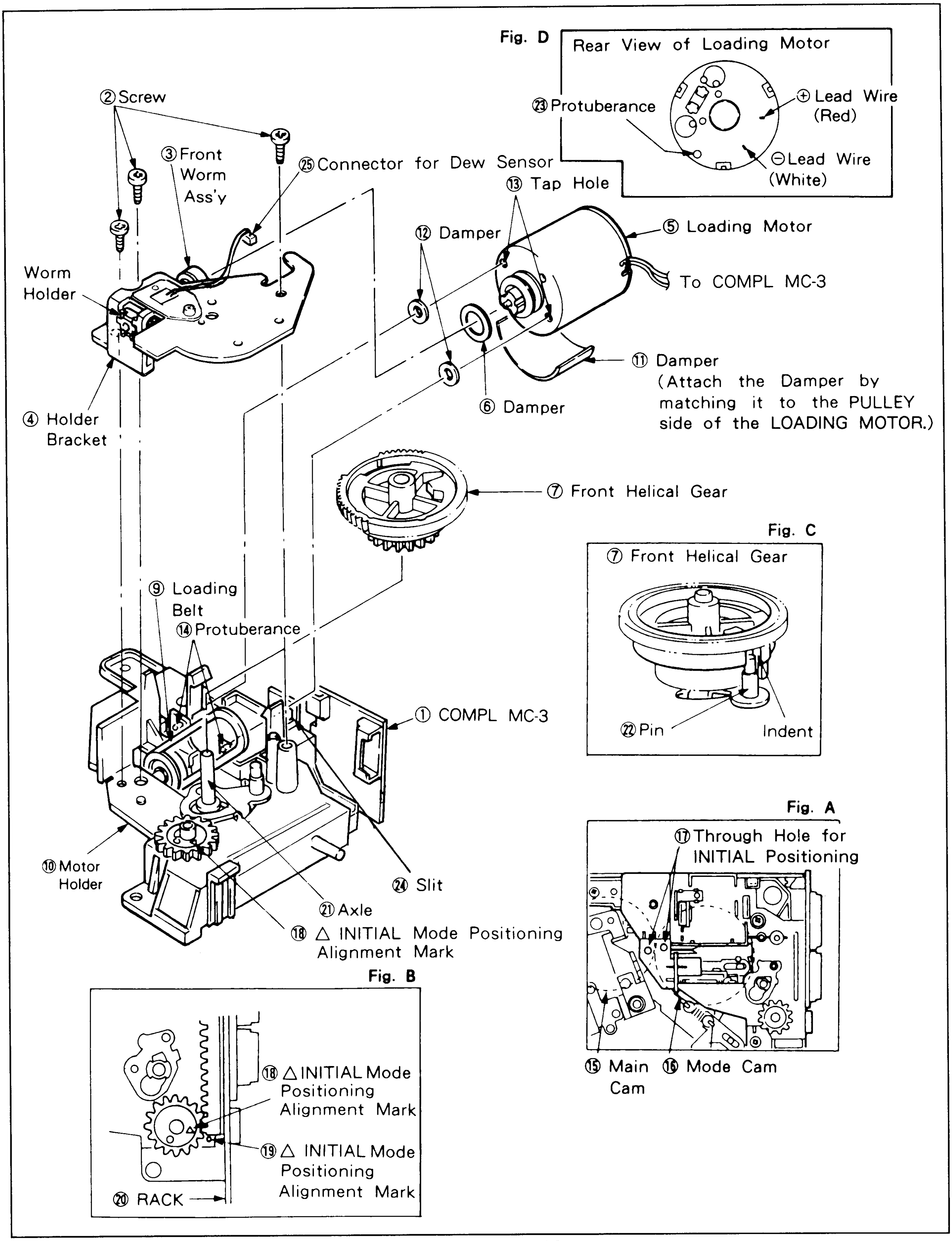


Fig. D
Rear View of Loading Motor
㉓ Protuberance
⊕ Lead Wire (Red)
⊖ Lead Wire (White)
② Screw
③ Front Worm Ass'y
㉕ Connector for Dew Sensor
⑬ Tap Hole
⑫ Damper
⑤ Loading Motor
To COMPL MC-3
Worm Holder
⑪ Damper
(Attach the Damper by matching it to the PULLEY side of the LOADING MOTOR.)
⑥ Damper
④ Holder Bracket
⑦ Front Helical Gear
Fig. C
⑦ Front Helical Gear
㉒ Pin
Indent
⑨ Loading Belt
⑭ Protuberance
① COMPL MC-3
⑩ Motor Holder
㉔ Slit
㉑ Axle
⑱ △ INITIAL Mode Positioning Alignment Mark
Fig. A
⑰ Through Hole for INITIAL Positioning
⑮ Main Cam
⑯ Mode Cam
Fig. B
⑱ △ INITIAL Mode Positioning Alignment Mark
⑲ △ INITIAL Mode Positioning Alignment Mark
⑳ RACK

Fig. 2-3-2. Loading Motor

2-4. TAPE LOADING MECHANISM

2-4-1. MAIN PARTS OF THE TAPE LOADING MECHANISM (See Fig. 2-4-1.)

1. Removal

1) Remove connectors from the DRUM MOTOR board (SV-5).
2) Remove the three screws ①, then remove the REINFORCE BRACKET ②.
3) Remove the two special washers ③, then remove the LOAD RACK ④.
4) Remove the special washer ⑤, then remove the CAM LOAD LEVER ASS'Y ⑥.
5) Remove the stop washer ⑦, then remove the MAIN CAM ⑧.
6) Unhook the LOAD GEAR T hook ⑩, then remove the LOAD GEAR T ⑨ as shown in Fig. A, with the SPRING COIL ⑪ and the LOAD LEVER ASS'Y T ⑫ attached to it.
7) Unhook the LOAD GEAR S hook ⑭, then remove the LOAD GEAR S ⑬ as shown in Fig. B, with the SPRING COIL S ⑮ and the LOAD LEVER ASS'Y S ⑯ attached to it.

Note: Take care not to open the LOAD GEAR hooks too much, otherwise they may be deformed or broken. If they are, replace them.

2. Remounting

1) Apply grease to the hole ⑰ of the LOAD LEVER ASS'Y S ⑯, as shown in Fig. B.
2) Apply grease to the hole ㉒ of the LOAD LEVER ASS'Y T ⑫ as shown in Fig. A, and to the sections of the LOAD GEAR T ⑨ as indicated with the arrows in Fig. C.
3) Apply grease to GROOVE 1, GROOVE 2, and the outer side of the MAIN CAM ⑧, shown in Fig. E.
4) Apply grease to the three oval holes of the LOAD RACK ④ as shown in Fig. D.
5) Apply grease to the outer surface of axles ⑲, ⑳, ㉖, and ㉘.
6) After assembling as shown in Fig. B, mount the LOAD GEAR S ⑬ onto the axle ⑲. Insert the ROLLER BASE S pin ⑱ into the hole ⑰ of the LOAD LEVER ASS'Y S.
7) After assembling as shown in Fig. A, mount the LOAD GEAR T ⑨ onto the axle ⑳. When doing so, align the INITIAL mode positioning alignment holes ㉑ of the LOAD GEAR S ⑬ and the LOAD GEAR T ⑨ to the INITIAL mode position. Insert the ROLLER BASE T pin ㉓ into the hole ㉒ of the LOAD LEVER ASS'Y T ⑫.
8) Mount the MAIN CAM ⑧ onto the axle ㉖. At the same time, be sure that the INITIAL mode positioning alignment holes ㉕ of the MAIN CAM ⑧ and the MODE CAM ㉔ match the INITIAL mode positioning alignment holes ㉞ of the MECHANISM CHASSIS. Also check to be sure that the pin ㉗ of the CAM PINCH LEVER ASS'Y is in GROOVE 1 of the MAIN CAM as shown in Fig. E.
9) Mount the special washer ⑦ onto the axle ㉖.
10) Mount the CAM LOAD LEVER ASS'Y ⑥ onto the axle ㉘. Insert the CAM LOAD LEVER ASS'Y pin ㉙ into the MAIN CAM GROOVE 2 as shown in Fig. E.
11) Mount the special washer ⑤ onto the axle ㉘.
12) Mount the LOAD RACK ④ onto the two axles ㉛. At the same time, set the INITIAL mode positioning alignment marks ㉚ of the LOAD RACK ④ and the LOAD GEAR T ⑨ to the INITIAL mode position. Insert the CAM LOAD LEVER ASS'Y pin ㉝ into the hole ㉜ of the LOAD RACK ④.
13) Mount the two special washers ③ onto the two axles ㉛.
14) Mount the REINFORCE BRACKET ② with the three screws ①.
15) Insert the connector into the DRUM MOTOR board (SV-5).
16) Confirm that loading and unloading are done smoothly.

Note: Be sure to do precise INITIAL mode positioning of cams and gears.

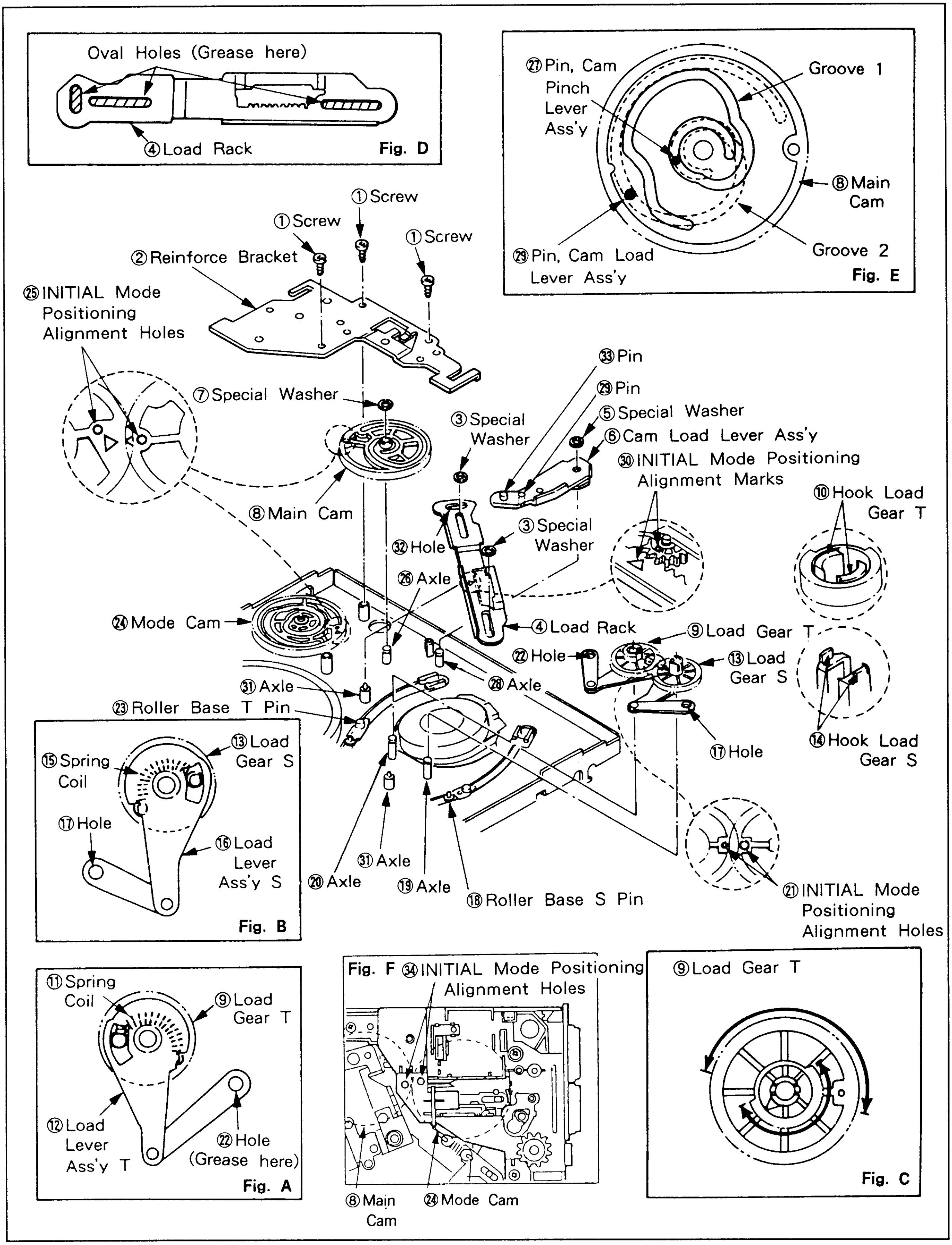

Oval Holes (Grease here)
④Load Rack
Fig. D
㉗Pin, Cam Pinch Lever Ass'y
Groove 1
⑧Main Cam
㉙Pin, Cam Load Lever Ass'y
Groove 2
Fig. E
①Screw
①Screw
①Screw
②Reinforce Bracket
㉕INITIAL Mode Positioning Alignment Holes
⑦Special Washer
⑧Main Cam
③Special Washer
㉝Pin
㉙Pin
⑤Special Washer
⑥Cam Load Lever Ass'y
㉚INITIAL Mode Positioning Alignment Marks
⑩Hook Load Gear T
③Special Washer
㉜Hole
㉖Axle
㉔Mode Cam
④Load Rack
⑨Load Gear T
㉒Hole
⑬Load Gear S
㉘Axle
㉛Axle
㉓Roller Base T Pin
⑰Hole
⑭Hook Load Gear S
⑮Spring Coil
⑬Load Gear S
⑰Hole
⑯Load Lever Ass'y S
Fig. B
㉛Axle
⑳Axle
⑲Axle
⑱Roller Base S Pin
㉑INITIAL Mode Positioning Alignment Holes
⑪Spring Coil
⑨Load Gear T
⑫Load Lever Ass'y T
㉒Hole (Grease here)
Fig. A
Fig. F ㉞INITIAL Mode Positioning Alignment Holes
⑧Main Cam
㉔Mode Cam
⑨Load Gear T
Fig. C

Fig. 2-4-1. Loading Mechanism Main Parts

2-4-2. MODE CAM (See Fig. 2-4-2.)

1. Removal

1) Set the INITIAL mode with the mode selector (VHJ-0050).
2) Remove the REINFORCE BRACKET as instructed in Section 2-4-1.
3) Remove the two special washers ①, then remove the CAM PLATE SLIDE ASS'Y ②.
4) Remove the MODE CAM ③.

2. Remounting

1) Referring to Fig. 2-4-1, confirm that the MAIN CAM is in the INITIAL mode position.
2) In case the MAIN CAM is out of position, use the mode selector (VHJ-0050) to align the MAIN CAM positioning hole with the chassis INITIAL mode position hole (refer to Fig. 2-4-1 for the INITIAL mode position). Since the ROTARY SWITCH (mode detector switch) does not rotate, the mode selector indicator lamp will not show the correct mode.
3) Align the ROTARY SWITCH (mode detector switch) ④ with the INITIAL mode positioning alignment mark ⑤ as shown in Fig. A.
4) Mount the MODE CAM ③ onto the axle ⑥. Do it so that the SLIDE CAM ASS'Y pin ⑪ is placed in GROOVE 3 as shown in Fig. B.
5) Mount the CAM PLATE SLIDE ASS'Y ② onto the axles ⑥ and ⑦. Do it so that the pin ⑧ gets into GROOVE 4 of the MODE CAM as shown in Fig. B, and the point of the bent-up part ⑨ goes into the ACT PLATE SLIDE ASS'Y hole ⑩.
6) Mount the two special washers ① onto the axles ⑥ and ⑦.
7) Mount the REINFORCE BRACKET as instructed in Section 2-4-1.

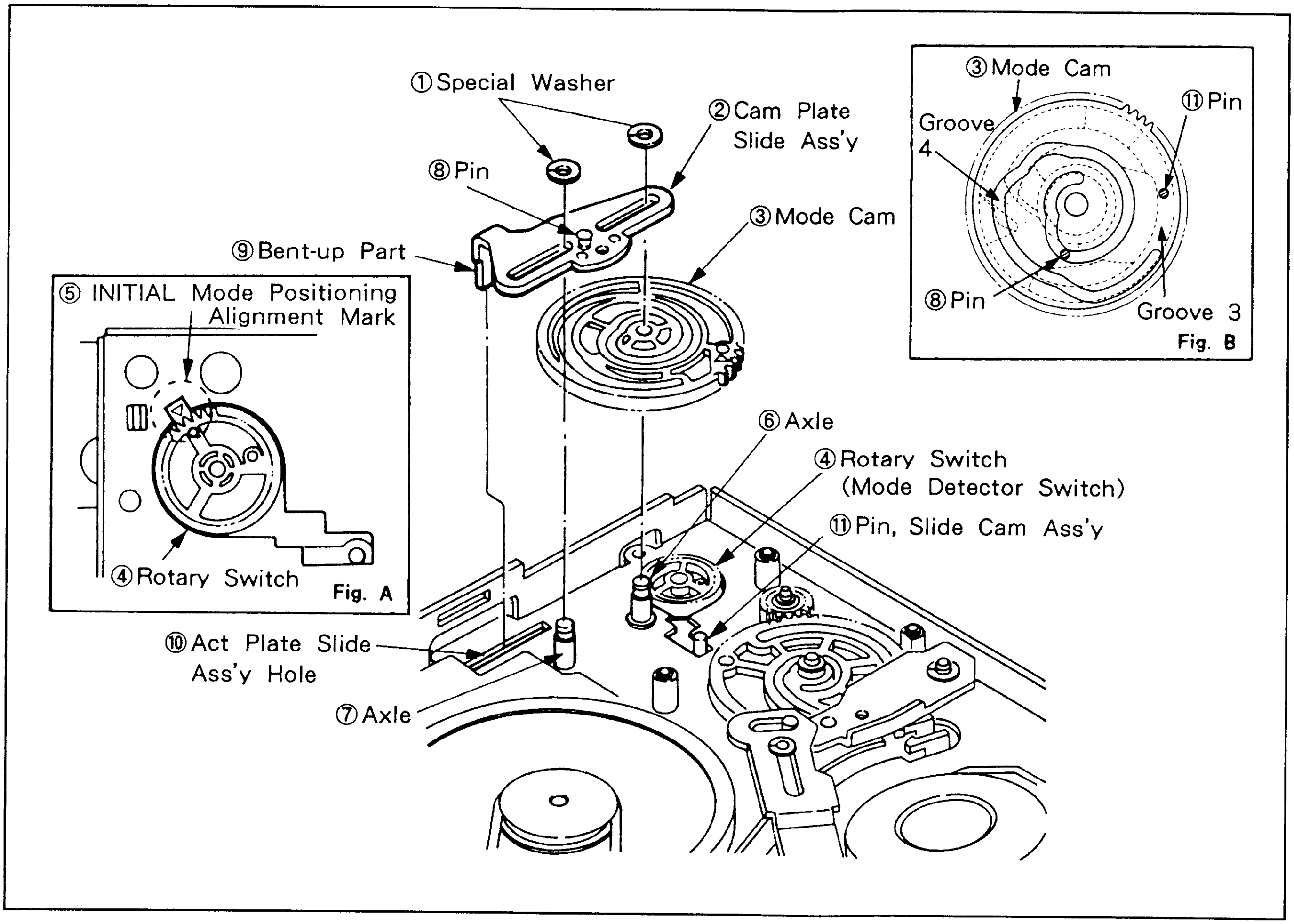

①Special Washer
②Cam Plate Slide Ass'y
⑧Pin
③Mode Cam
⑨Bent-up Part
⑤ INITIAL Mode Positioning Alignment Mark
④Rotary Switch
Fig. A
⑩Act Plate Slide Ass'y Hole
⑦Axle
⑥Axle
④Rotary Switch (Mode Detector Switch)
⑪Pin, Slide Cam Ass'y
③Mode Cam
Groove 4
⑪Pin
⑧Pin
Groove 3
Fig. B

Fig. 2-4-2. Mode Cam

2-5. COMPL MOUNTING HEAD (ACE HEAD) (See Fig. 2-5-1.)

1. Removal

1) Remove the special nut ②.
2) Remove the SLEEVE ③, the COMPL MOUNTING HEAD ①, and the SPRING COIL ④, in that order.

Note: Be careful not to scratch or soil the ACE head surface.

2. Remounting

1) Apply grease to the axle ⑥ as shown in Fig. A.
2) Apply grease to the spot where the COMPL MOUNTING HEAD ① makes contact with the STOPPER ⑦.
3) Mount the SPRING COIL ④ and the COMPL MOUNTING HEAD ①, in that order, onto the axle ⑥. Hook one end of the SPRING COIL ④ to the notch ⑤, and the other end to the COMPL MOUNTING HEAD, so that the COMPL MOUNTING HEAD is pressed against the STOPPER ⑦.
4) Mount the special nut ② onto the axle ⑥ through the SLEEVE ③.
5) Clean the ACE head surface with a chamois moistened with methyl alcohol.
6) Do ACE head adjustment as instructed in Section 6-4.

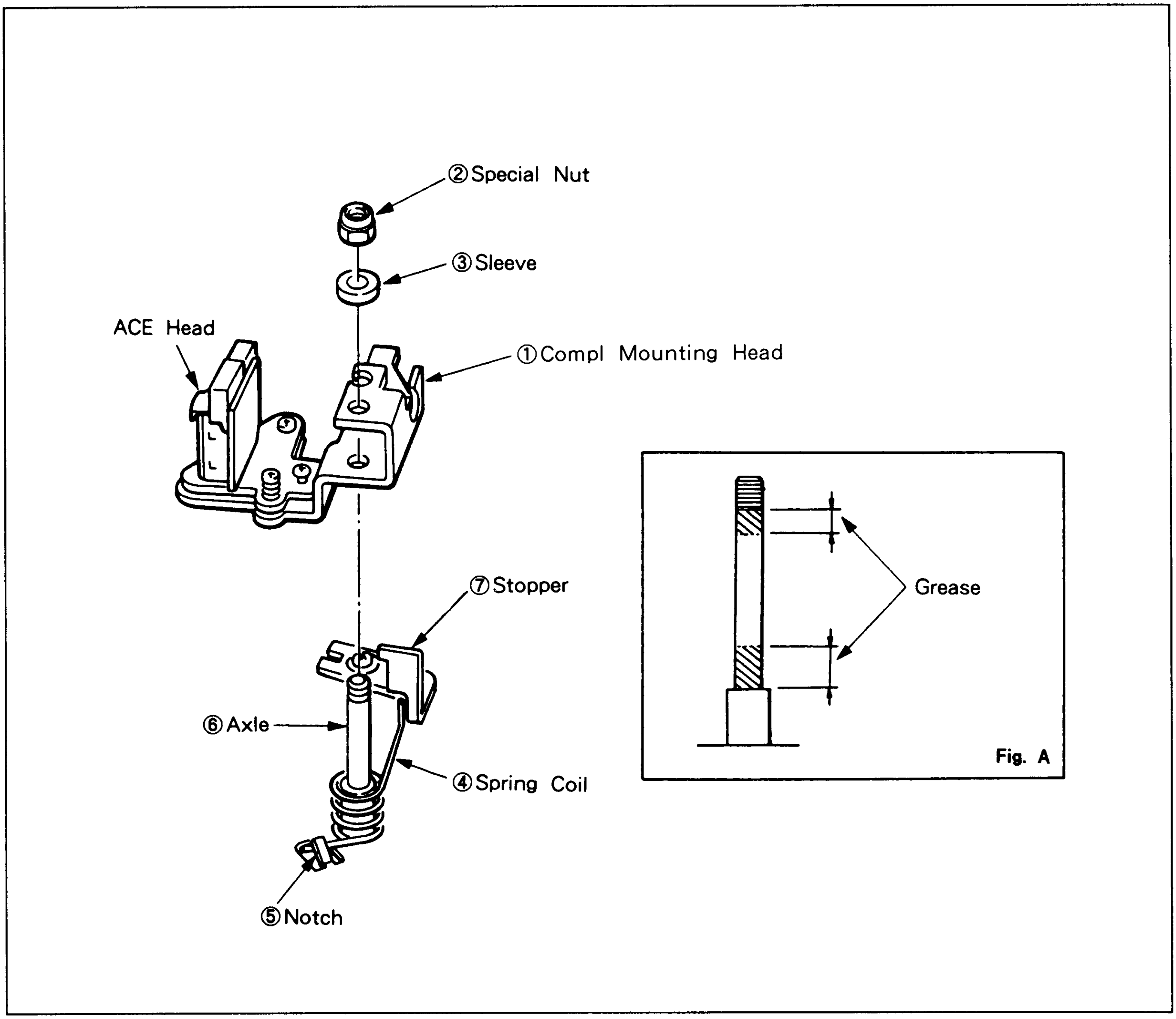

②Special Nut
③Sleeve
ACE Head
①Compl Mounting Head
⑦Stopper
⑥Axle
④Spring Coil
⑤Notch
Grease
Fig. A

Fig. 2-5-1. **Compl Mounting Head (ACE Head)**

2-6. PINCH ROLLER PRESSURE MECHANISM (See Fig. 2-6-1.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the COMPL MOUNTING HEAD as instructed in Section 2-5.
3) Remove the PINCH SPRING COIL ①.
4) Remove the special washer ②, then remove the PINCH LEVER ASS'Y ③.
5) Remove the REV GUIDE LEVER SPRING COIL ④.
6) Remove the REV GUIDE LEVER ASS'Y ⑥ from the hook ⑤ of the plastic bearing on the bottom side. Use a jig (VHJ-0073) shown in Fig. 2-6-2 to widen the hook of the plastic bearing. Doing so makes the removal of the REV GUIDE LEVER ASS'Y ⑥ a little easier. Care should be taken to avoid pushing the jig VHJ-0073 too much. Pushing it too hard could damage the hook.
7) Remove the SLIDE BRAKE SPRING COIL ⑦.
8) Remove the special washer ⑧, then remove the PINCH CAM LEVER ASS'Y ⑨.
9) Remove the ACT PINCH SLIDE ASS'Y ⑩.

Note: If the hook ⑤ of the plastic bearing is damaged, refer to Section 2-6 (3), "Method of Repairing the Bearing Section of REV GUIDE LEVER ASS'Y."

2. Remounting

1) Apply grease to pins ⑫/⑬ and axles ⑯/⑱.
2) Apply grease to the ACT PINCH SLIDE ASS'Y pin ⑰.
3) Set the INITIAL mode with the mode selector (VHJ-0050).
4) Mount the ACT PINCH SLIDE ASS'Y ⑩ onto pins ⑫ and ⑬.
5) Insert pin ⑭ of the PINCH CAM LEVER ASS'Y ⑨ into the MAIN CAM ⑪ GROOVE 1, and then mount the PINCH CAM LEVER ASS'Y onto the axle ⑯ while inserting the ACT PINCH SLIDE ASS'Y's pin ⑰ into the hole ⑮.
6) Mount the special washer ⑧ onto the axle ⑯.
7) Hook the SLIDE BRAKE SPRING COIL ⑦ to the plastic pin ⑲.
8) Mount the REV GUIDE LEVER ASS'Y ⑥ to the plastic molding bearing, then secure it with the hook ⑤ at the bottom.
9) Hook the REV GUIDE LEVER SPRING COIL ④.
10) Mount the PINCH LEVER ASS'Y ③ onto the axle ⑱.
11) Mount the special washer ② onto the axle ⑱.
12) Hook the PINCH SPRING COIL ① between the ACT PINCH SLIDE ASS'Y ⑩ and the PINCH LEVER ASS'Y ③.
13) Mount the COMPL MOUNTING HEAD as instructed in Section 2-5.
14) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
15) Do ACE head adjustment as instructed in Section 6-4.

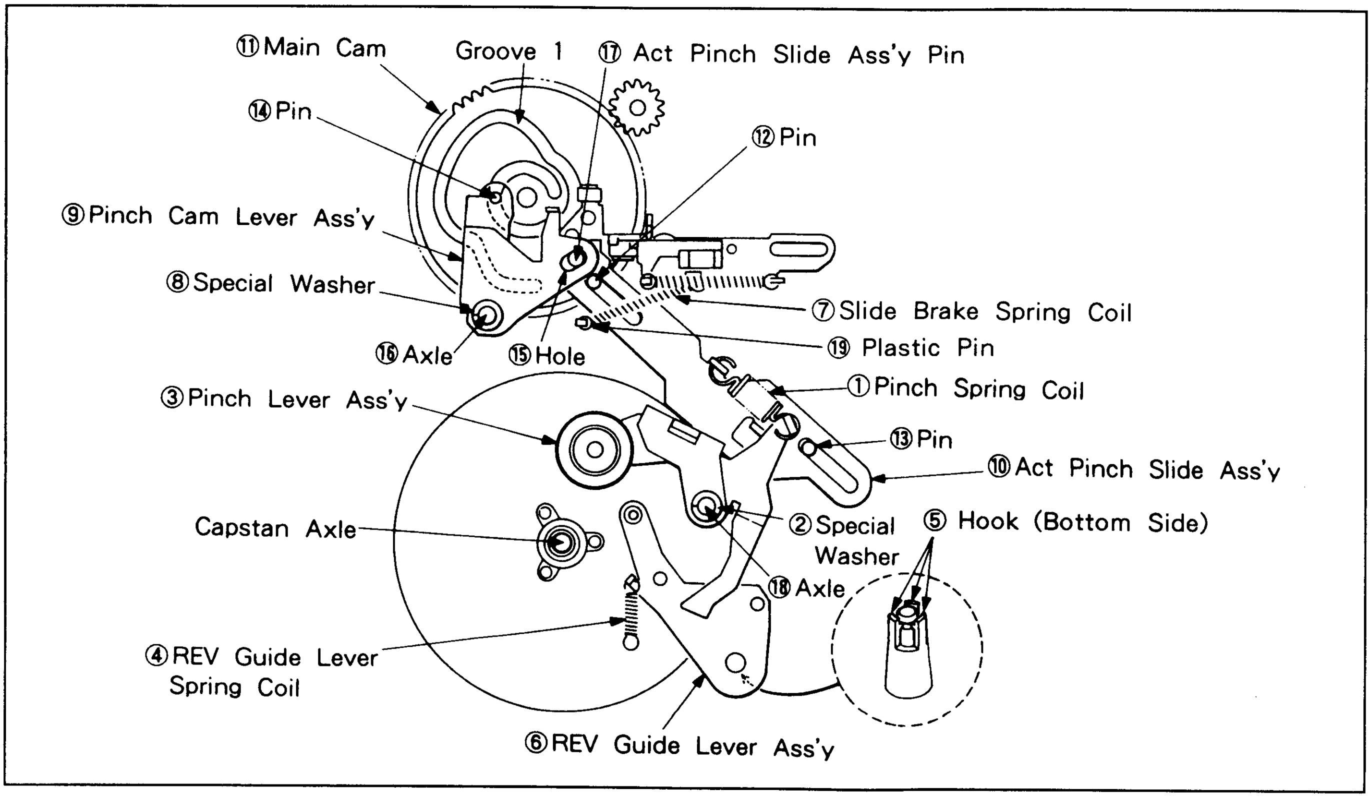
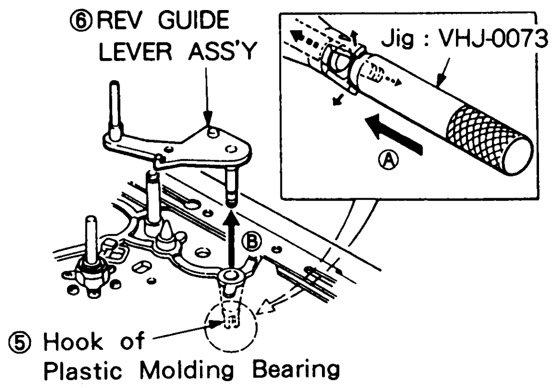

⑪Main Cam
Groove 1
⑰ Act Pinch Slide Ass'y Pin
⑭Pin
⑫Pin
⑨Pinch Cam Lever Ass'y
⑧Special Washer
⑦Slide Brake Spring Coil
⑲ Plastic Pin
⑯Axle
⑮Hole
①Pinch Spring Coil
③Pinch Lever Ass'y
⑬Pin
⑩Act Pinch Slide Ass'y
Capstan Axle
②Special Washer
⑤ Hook (Bottom Side)
⑱Axle
④REV Guide Lever Spring Coil
⑥REV Guide Lever Ass'y

Fig. 2-6-1. Pinch Roller Pressure Mechanism


⑥REV GUIDE LEVER ASS'Y
Jig : VHJ-0073
Ⓐ
Ⓑ
⑤ Hook of Plastic Molding Bearing

Remove the REV GUIDE LEVER ASS'Y in the direction shown by arrow Ⓑ, pushing VHJ-0073 slightly in the direction shown by arrow Ⓐ.
Be careful not to damage the hook by pushing it too much.

Fig. 2-6-2. Method of Using Jig VHJ-0073

3. Method of Repairing the Bearing Section of the REV GUIDE LEVER ASS'Y

If the hook of the plastic molding bearing is damaged in the process of removing the REV GUIDE LEVER ASS'Y, proceed with the repair as follows:

1) Scrape the broken hook of the bearing section with a knife and flatten it.
2) Insert the REV GUIDE LEVER ASS'Y in the bearing and fit a stopper washer in it. The special washer to be used must be Part No. 411 109 1605. This stop washer (part No. 411 109 1605) is the same as that used on the SUPPLY REEL ASS'Y or TAKE-UP REEL ASS'Y.
3) Remove the REV GUIDE LEVER ASS'Y in the direction shown by arrow B while pushing jig VHJ-0073 lightly in the direction shown by arrow Ⓐ. Pushing jig VHJ-0073 too much may cause hook breakage. Therefore, care should be taken.

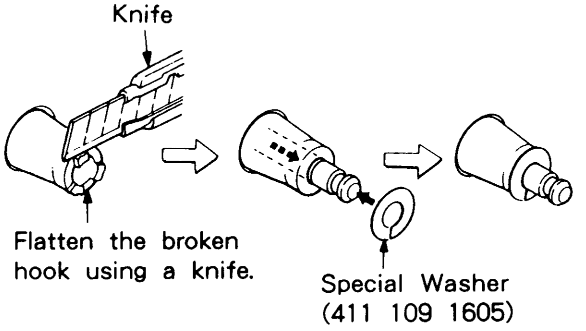

Knife
Flatten the broken hook using a knife.
Special Washer (411 109 1605)

Fig. 2-6-3. Method of Repairing the Bearing Section of the REV GUIDE LEVER ASS'Y

2-7. BRAKE MECHANISM

2-7-1. SUB TAKE-UP BRAKE ASS'Y (See Fig. 2-7-1.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the SPRING COIL ①.
3) While pushing the hook ② in the direction shown by the arrow in Fig. 2-7-1, remove the SUB TAKE-UP BRAKE ASS'Y ③.

2. Remounting

1) Mount the SUB TAKE-UP BRAKE ASS'Y ③ on to the pin ④. Confirm that the hook ② is firmly hooked to the chassis.
2) Fit the SPRING COIL between hooks ⑤ and ⑥.
3) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

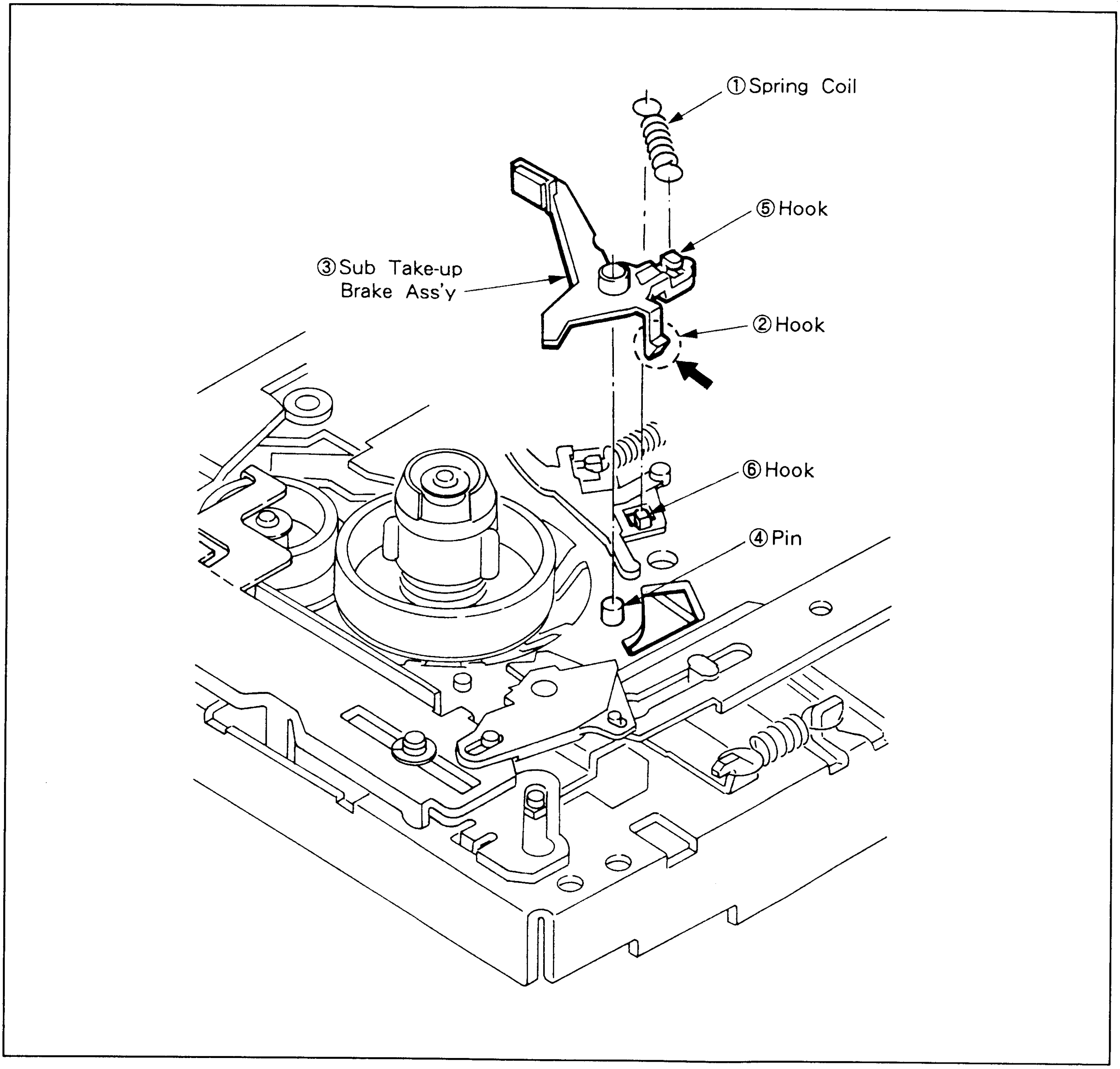

①Spring Coil
⑤Hook
③Sub Take-up Brake Ass'y
②Hook
⑥Hook
④Pin

Fig. 2-7-1. Sub Take-Up Brake Ass'y

2-7-2. SUPPLY BRAKE ASS'Y AND TAKE-UP BRAKE ASS'Y (See Fig. 2-7-2.)

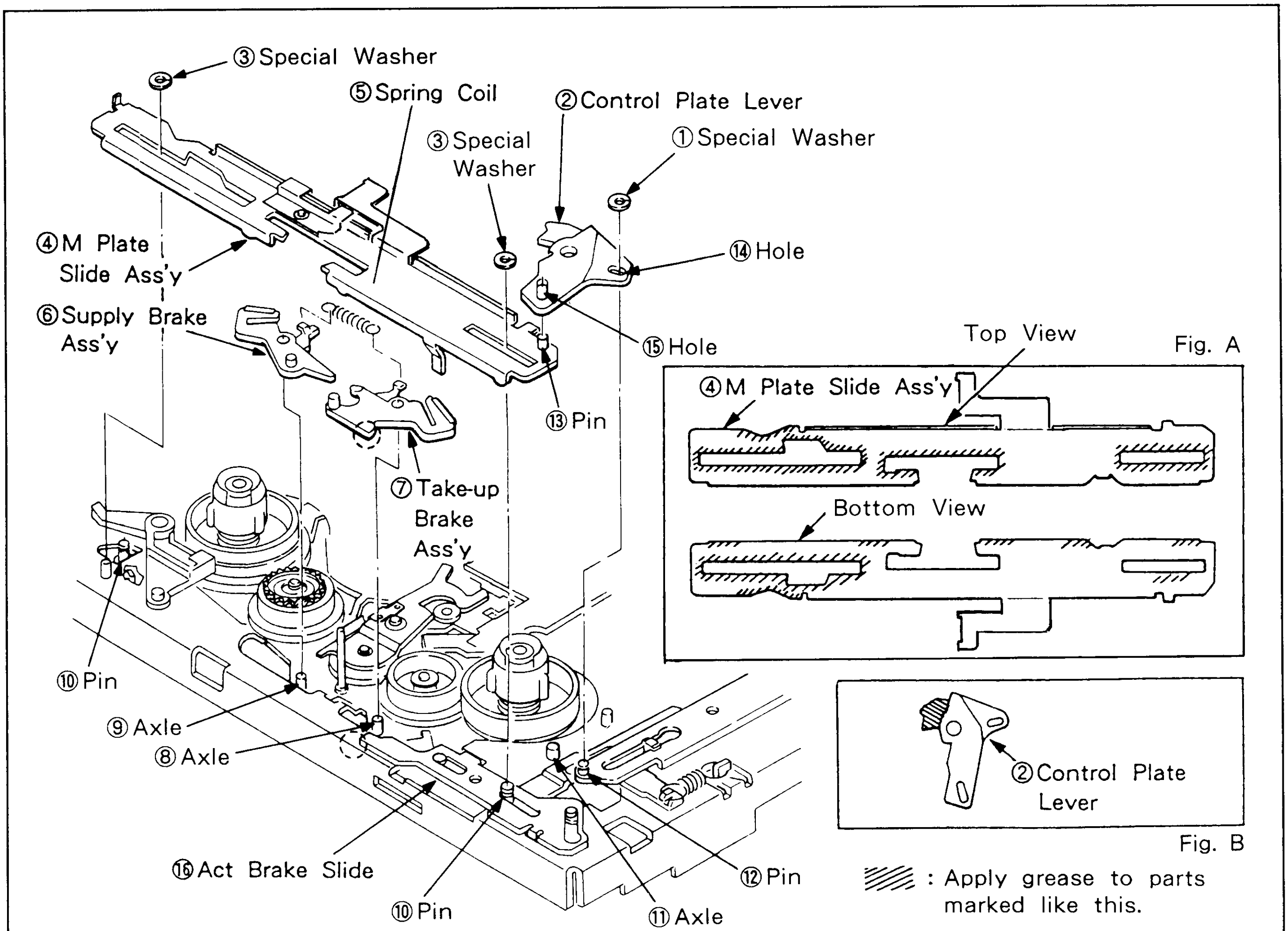
1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the SUB TAKE-UP BRAKE as instructed in Section 2-7-1.
3) Remove the special washer ①, then remove the CONTROL PLATE LEVER ②.
4) Remove the two special washers ③, then remove the M PLATE SLIDE ASS'Y ④.
5) Remove the SPRING COIL ⑤.
6) Remove the SUPPLY BRAKE ASS'Y ⑥ and the TAKE-UP BRAKE ASS'Y ⑦.

Note: Be careful not to soil the brake shoes.

2. Remounting

1) Apply a thin layer of grease to axles ⑧ and ⑨.
2) Mount the TAKE-UP BRAKE ASS'Y ⑦ onto the axle ⑧.
3) Mount the SUPPLY BRAKE ASS'Y ⑥ onto the axle ⑨.
4) After applying a thin layer of grease to the M PLATE SLIDE ASS'Y ④ as shown in Fig. A, mount it onto the two pins ⑩.
5) Mount the two special washers ③ onto the two pins ⑩.
6) After applying grease to the CONTROL PLATE LEVER ② as shown in Fig. B, mount it onto the axle ⑪. Insert the pin ⑫ of the ACT PLATE SLIDE ASS'Y into the hole ⑭, and the pin ⑬ of the M PLATE SLIDE ASS'Y into the hole ⑮.
7) Mount the special washer ① onto the pin ⑫.
8) Mount the SUB TAKE-UP BRAKE as instructed in Section 2-7-1.
9) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.


③Special Washer
⑤Spring Coil
②Control Plate Lever
③Special Washer
①Special Washer
④M Plate Slide Ass'y
⑭Hole
⑥Supply Brake Ass'y
⑮Hole
⑬Pin
⑦Take-up Brake Ass'y
Top View
Fig. A
④M Plate Slide Ass'y
Bottom View
⑩Pin
⑨Axle
⑧Axle
②Control Plate Lever
Fig. B
⑯Act Brake Slide
⑩Pin
⑪Axle
⑫Pin

▨ : Apply grease to parts marked like this.

When assembling, the contact surfaces of the take-up brake ⑦ and the brake slide ⑯ marked with ⬚ should contact but not overlap each other.

Fig. 2-7-2. Supply Brake Ass'y and Take-Up Brake Ass'y

2-7-3. TENSION LEVER ASS'Y AND BAND HOLDER ASS'Y (See Fig. 2-7-3.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the SPRING COIL ①.
3) Remove the screw ③ and the washer securing the BAND HOLDER ASS'Y ②.
4) Push the SUB SUPPLY BRAKE ④ in the direction shown by the arrow Ⓐ, setting the BAND HOLDER ASS'Y ② free.
5) Open the hook ⑤ a little and remove the TENSION LEVER ASS'Y ⑥. Be careful not to open the hook ⑤ too much because it may bend or break.
6) Remove the hook ⑦ of the BAND HOLDER ASS'Y.
7) Remove the special washer ⑮, then remove the SPRING COIL ⑯ and the BRAKE BAND LEVER ASS'Y ⑰.

2. Remounting

1) Mount the BRAKE BAND LEVER ASS'Y ⑰, the SPRING COIL ⑯, and the special washer ⑮, in that order, onto the axle ㉑. At the same time, hook the SPRING COIL ⑯ into the hole ⑱ of the BRAKE BAND LEVER ASS'Y ⑰ and the hole ⑲ of chassis.
2) Mount the BAND HOLDER ASS'Y hook ⑦ into the TENSION LEVER ASS'Y hole ⑧.
3) Insert the TENSION LEVER ASS'Y axle ⑨ into the hole ⑩ and confirm that the hook ⑤ is hooked.
4) While pushing the SUB SUPPLY BRAKE ④ in the direction shown by arrow Ⓐ, attach the BAND HOLDER ASS'Y ② with the washer ⑭ and the screw ③. At the same time, wind the BAND HOLDER ASS'Y ② along the SUPPLY REEL ASS'Y ⑳.
5) Hook the SPRING COIL ① between hooks ⑪ and ⑫.
6) Do the TENSION POLE position adjustment as instructed in Section 6-3.
7) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

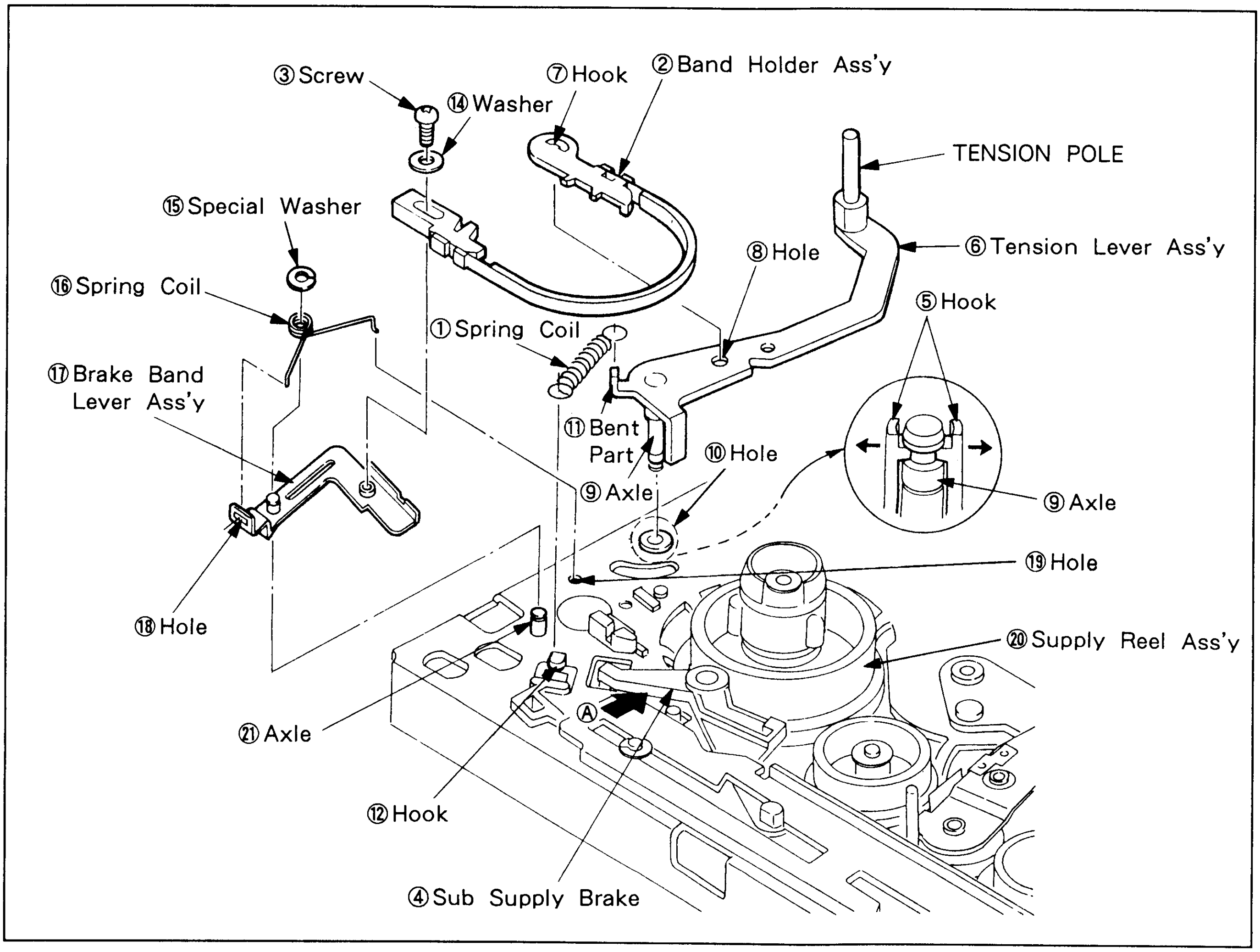

③Screw
⑦Hook
②Band Holder Ass'y
⑭Washer
TENSION POLE
⑮Special Washer
⑧Hole
⑥Tension Lever Ass'y
⑯Spring Coil
⑤Hook
①Spring Coil
⑰Brake Band Lever Ass'y
⑪Bent Part
⑩Hole
⑨Axle
⑨Axle
⑲Hole
⑱Hole
⑳Supply Reel Ass'y
Ⓐ
㉑Axle
⑫Hook
④Sub Supply Brake

Fig. 2-7-3. Tension Lever Ass'y and Band Holder Ass'y

2-7-4. CAPSTAN BRAKE ASS'Y (See Fig. 2-7-4.)

1. Removal

1) Remove the SPRING COIL ①.
2) Unhook the hook ②, then remove the CAPSTAN BRAKE ASS'Y ③.

2. Remounting

1) Mount the CAPSTAN BRAKE ASS'Y ③ onto the axle ④. Confirm that the hook ② is hooked to the chassis.
2) Hook the SPRING COIL ① between hooks ⑤ and ⑥. Secure the hook ⑥ side with adhesive (use an adhesive that allows later detaching).

Note: As for the model with two video heads, there are two types : one with the spring coil ① and CAPSTAN BRAKE ASS'Y ③ installed, and one without these parts.

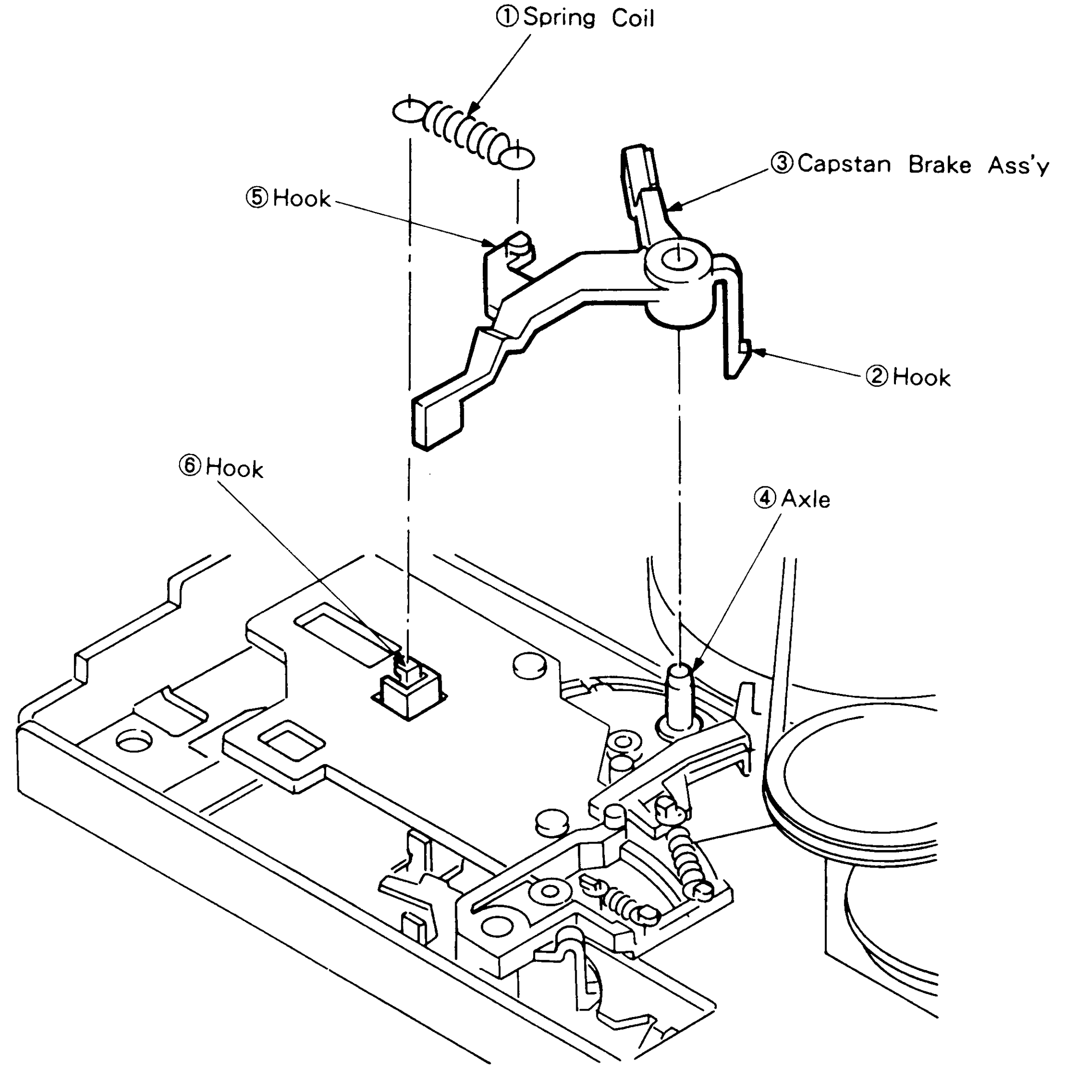


Fig. 2-7-4. Capstan Brake Ass'y

2-8. REEL TABLE DRIVE MECHANISM

2-8-1. SUPPLY REEL ASS'Y AND ONE WAY GEAR ASS'Y (See Fig. 2-8-1.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the BAND HOLDER ASS'Y as instructed in Section 2-7-3.
3) Set the PLAY mode with the mode selector (VHJ-0050).
4) Remove the special washer ①, then remove the SUPPLY REEL ASS'Y ② and the washer ③.
5) Remove the special washer ④.
6) While pushing the SUPPLY BRAKE ASS'Y ⑤ in the direction shown by arrow Ⓐ, remove the ONE WAY GEAR ASS'Y ⑥ and the washer ⑦.

Note: Be sure that no dirt gets on the section where both brake shoes make contact.

2. Remounting

1) Apply a little oil (less than one drop) to the part of the axle ⑧ indicated by arrow Ⓑ, then slide the washer ⑦ over the axle.
2) While pushing the SUPPLY BRAKE ASS'Y ⑤ in the direction shown by arrow Ⓐ, slide the ONE WAY GEAR ASS'Y ⑥ onto the axle ⑧.
3) Slide the special washer ④ over the axle ⑧.
4) Apply 1 drop of oil to the part of the axle ⑨ indicated by arrow C, then slide the washer ③ over the axle.
5) Slide the SUPPLY REEL ASS'Y ② onto the axle ⑨.
6) Do the reel table height adjustment as instructed in Section 6-2-1.
7) Slide the special washer ① over the axle ⑨.
8) Mount the BAND HOLDER ASS'Y as instructed in Section 2-7-3.
9) Do the tension pole position adjustment as instructed in Section 6-3.
10) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

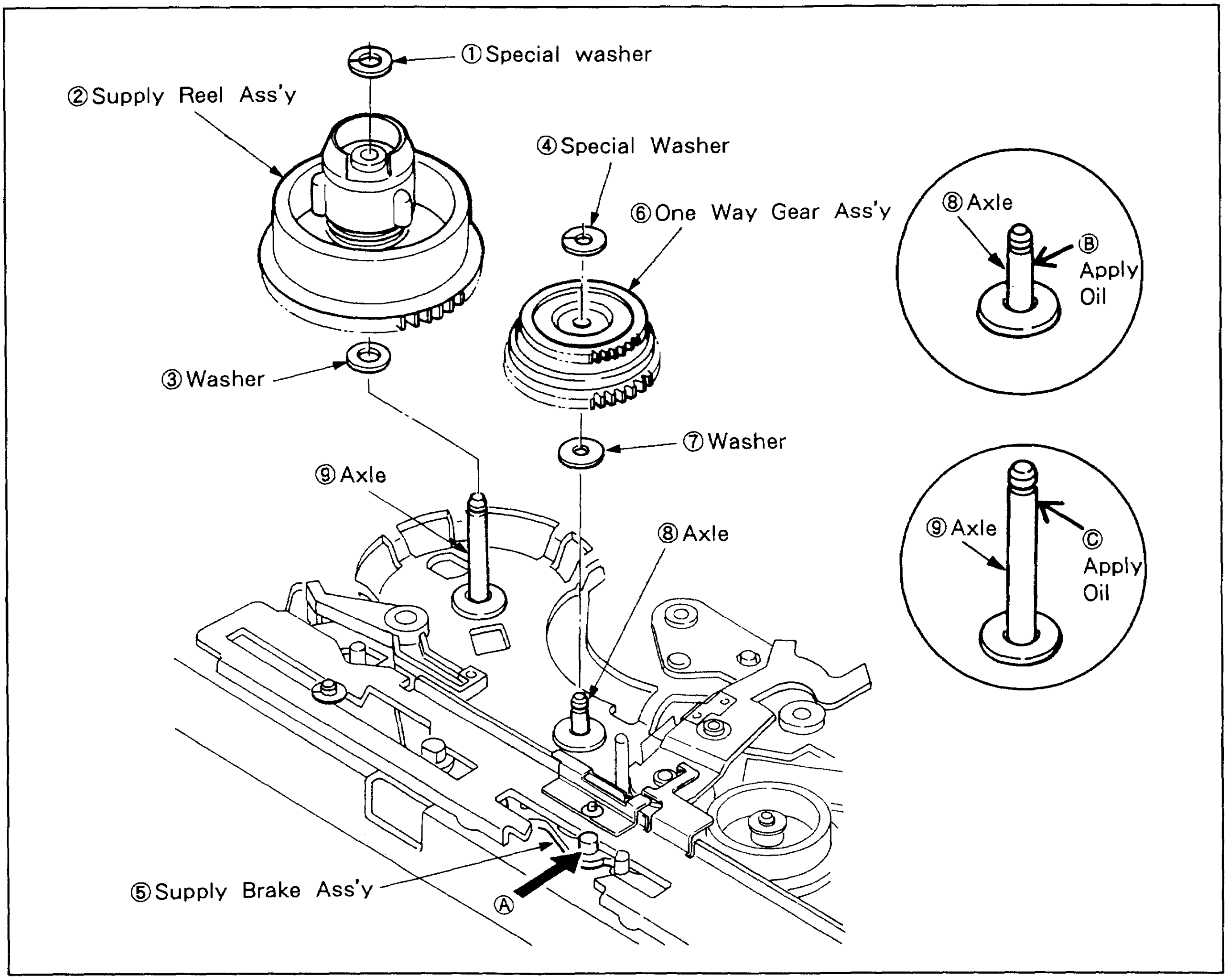

①Special washer
②Supply Reel Ass'y
④Special Washer
⑥One Way Gear Ass'y
⑧Axle
Ⓑ
Apply Oil
③Washer
⑦Washer
⑨Axle
⑧Axle
⑨Axle
Ⓒ
Apply Oil
⑤Supply Brake Ass'y
Ⓐ

Fig. 2-8-1. Supply Reel Ass'y and One Way Gear Ass'y

2-8-2. TAKE-UP REEL ASS'Y (See Fig. 2-8-2.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the special washer ①.
3) Push the SUB TAKE-UP BRAKE ASS'Y ② in the direction shown by arrow Ⓐ to release the brake, then remove the TAKE-UP REEL ASS'Y ③ and the washer ④.

Note: Be sure that no dirt gets on the section where both brake shoes make contact.

2. Remounting

1) Apply 1 drop of oil to the part of the axle ⑤ indicated by arrow Ⓑ, then slide the washer ④ over the axle ⑤.
2) While pushing the SUB TAKE-UP BRAKE ASS'Y ② in the direction shown by arrow Ⓐ, slide the TAKE-UP REEL ASS'Y ③ onto the axle ⑤.
3) Do the reel table height adjustment as instructed in Section 6-2.
4) Slide the special washer ① over the axle ⑤.
5) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

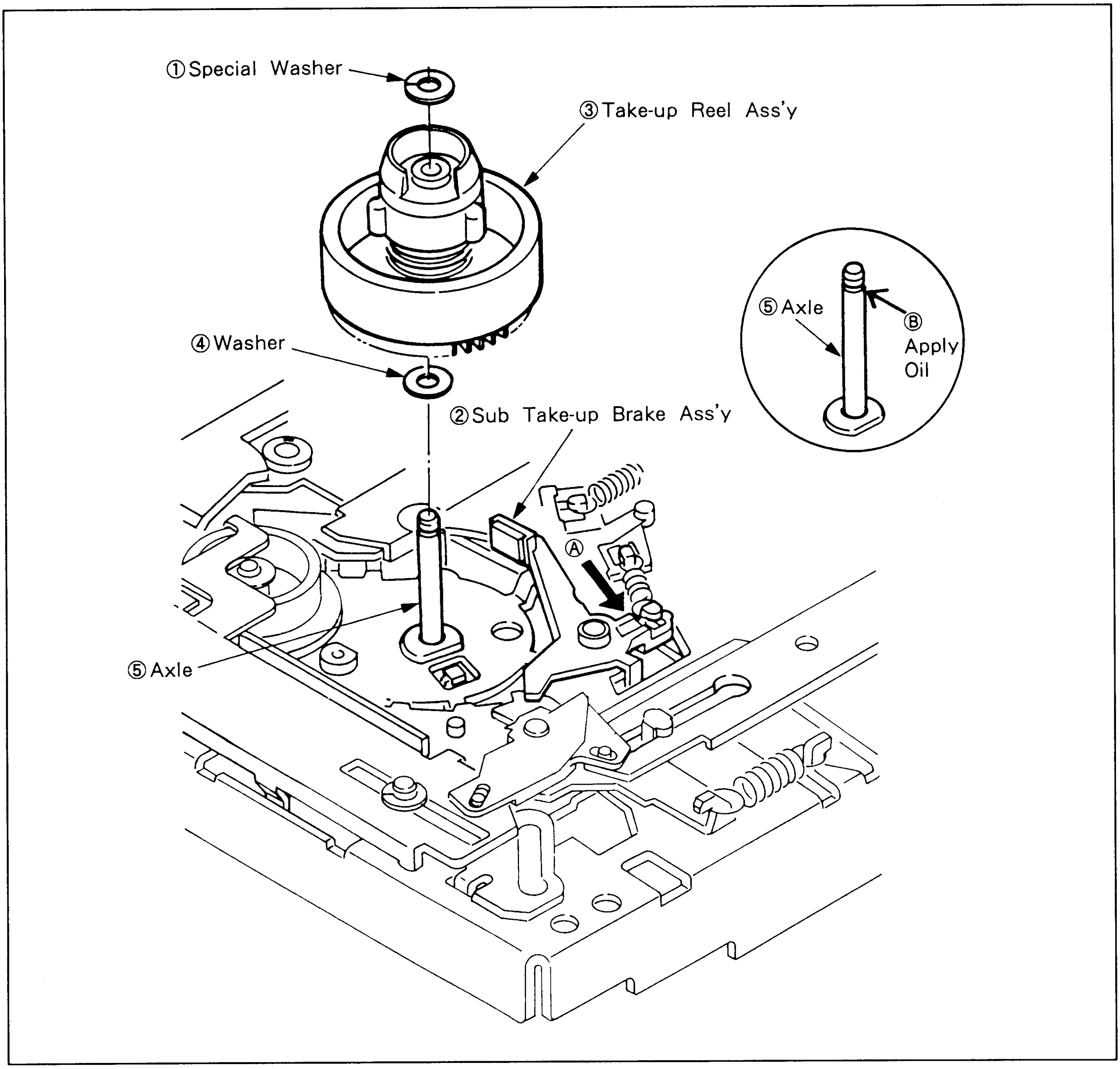

①Special Washer
③Take-up Reel Ass'y
⑤Axle
Ⓑ
Apply
Oil
④Washer
②Sub Take-up Brake Ass'y
Ⓐ
⑤Axle

Fig. 2-8-2. Take-Up Reel Ass'y

2-8-3. TAKE-UP REEL GEAR (See Fig. 2-8-3.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the TAKE-UP REEL ASS'Y as instructed in Section 2-8-2.
3) Remove the SUB TAKE-UP BRAKE ASS'Y as instructed in Section 2-7-1.
4) Remove the TAKE-UP BRAKE ASS'Y as instructed in Section 2-7-2.
5) Remove the special washer ①, then remove the TAKE-UP REEL GEAR ③ and the washer ④.

2. Remounting

1) Apply a little oil (less than one drop) to the part of the axle ⑤ indicated by an arrow.
2) Slide the washer ④ and the TAKE-UP REEL GEAR ③ onto the axle ⑤.
3) Slide the special washer ① over the axle ⑤.
4) Mount the TAKE-UP BRAKE ASS'Y as instructed in Section 2-7-2.
5) Mount the SUB TAKE-UP BRAKE ASS'Y as instructed in Section 2-7-1.
6) Mount the TAKE-UP REEL ASS'Y as instructed in Section 2-8-2.
7) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

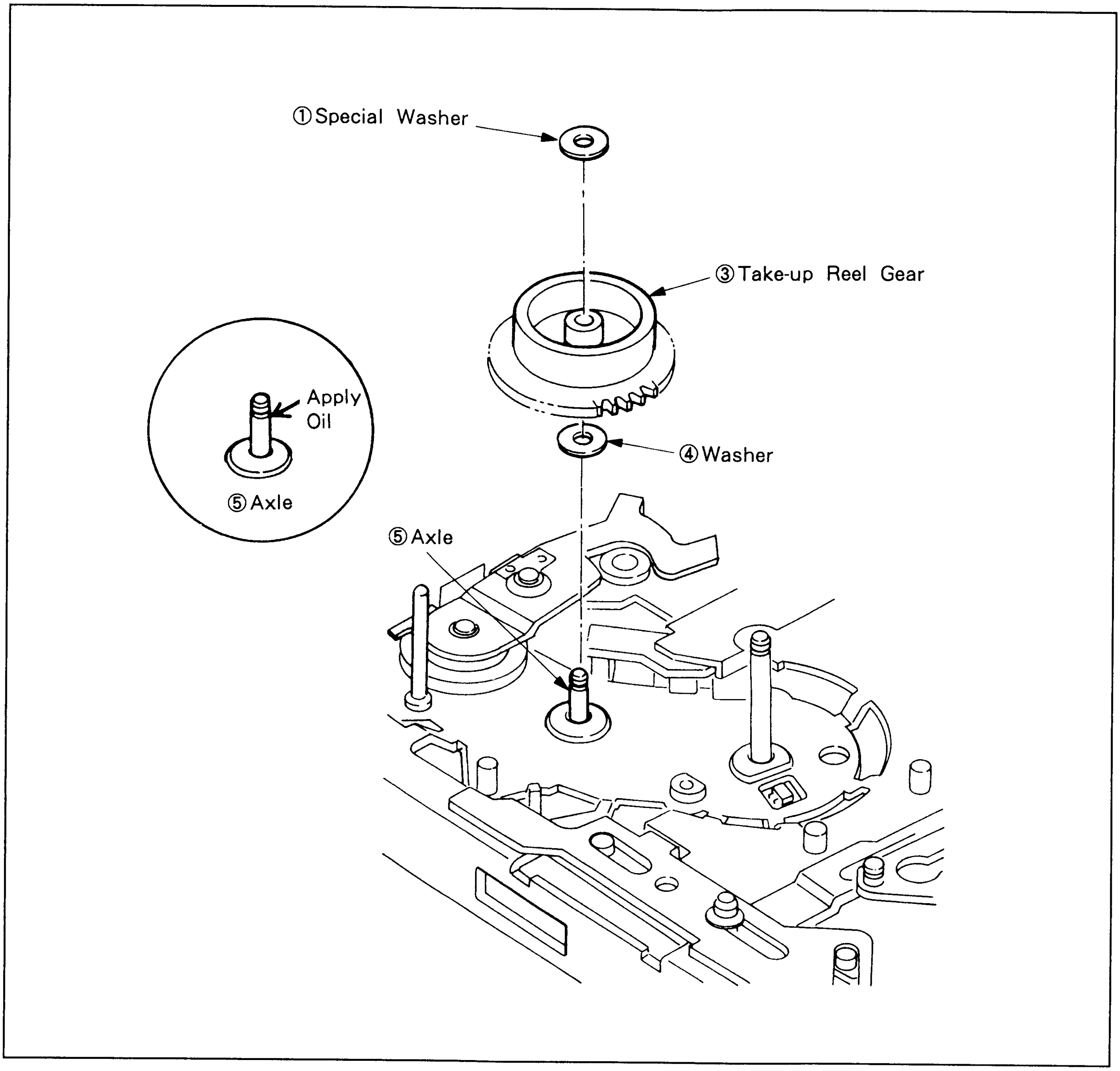


Fig. 2-8-3. Take-Up Reel Gear

2-8-4. REEL PULLEY AND FRICTION GEAR ASS'Y (See Fig. 2-8-4.)

1. Removal

1) Remove the two screws ①, then remove the PULLEY BRACKET ②.
2) Remove the REEL DRIVE BELT ③.
3) Remove the special washer ④, then remove the REEL PULLEY ⑤.
4) Remove the special washer ⑥, then remove the FRICTION GEAR ASS'Y ⑦ and the washer ⑧.

2. Remounting

1) Apply one drop of oil to the parts of axles ⑨ and ⑩ indicated by arrows.
2) Slide the washer ⑧ and the FRICTION GEAR ASS'Y ⑦ onto the axle ⑨.
3) Slide the special washer ⑥ over the axle ⑨.
4) Slide the REEL PULLEY ⑤ onto the axle ⑩.
5) Slide the special washer ④ over the axle ⑩.
6) Set the REEL DRIVE BELT ③ into position.
7) Attach the PULLEY BRACKET ② with the two screws ①.

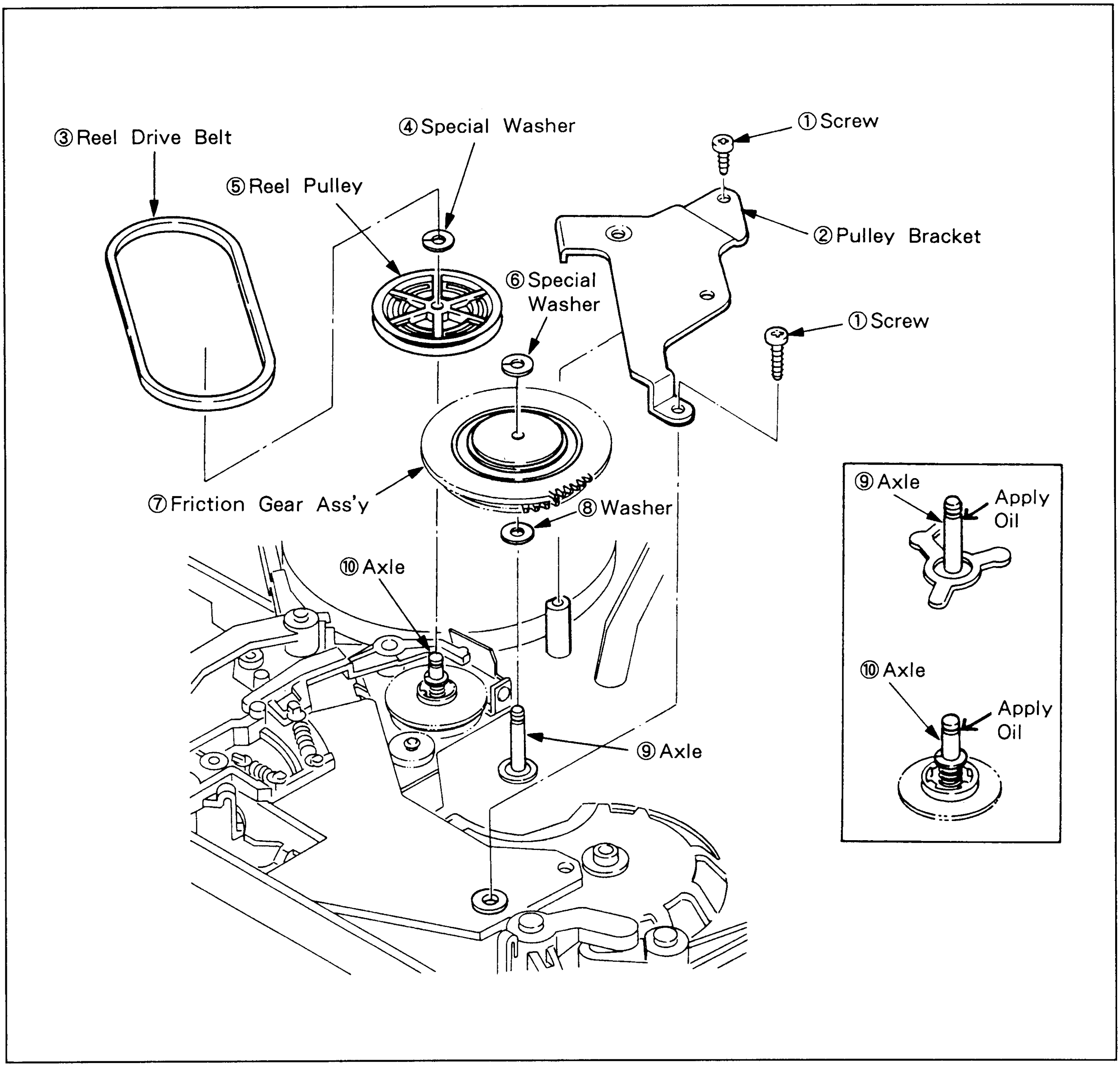

③Reel Drive Belt
④Special Washer
①Screw
⑤Reel Pulley
②Pulley Bracket
⑥Special Washer
①Screw
⑦Friction Gear Ass'y
⑧Washer
⑩Axle
⑨Axle
⑨Axle
Apply Oil
⑩Axle
Apply Oil

Fig. 2-8-4. Reel Pulley and Friction Gear Ass'y

2-8-5. COMPL CLUTCH (See Fig. 2-8-5.)

1. Removal

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Remove the REEL DRIVE BELT and the REEL PULLEY as instructed in Section 2-8-4.
3) Remove the screw ①, then remove the COMPL MC-4 ②.
4) Remove the two screws ③, then remove the COMPL CLUTCH ④.

2. Remounting

1) Attach the COMPL CLUTCH ④ with the two screws ③, aligning it with the protuberance ⑤.
2) After inserting CN831 (COMPL MC-4) into CN801 (COMPL MC-1), attach the COMPL MC-4 with the screw ①.
3) Mount the REEL PULLEY and the REEL DRIVE BELT as instructed in Section 2-8-4.
4) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

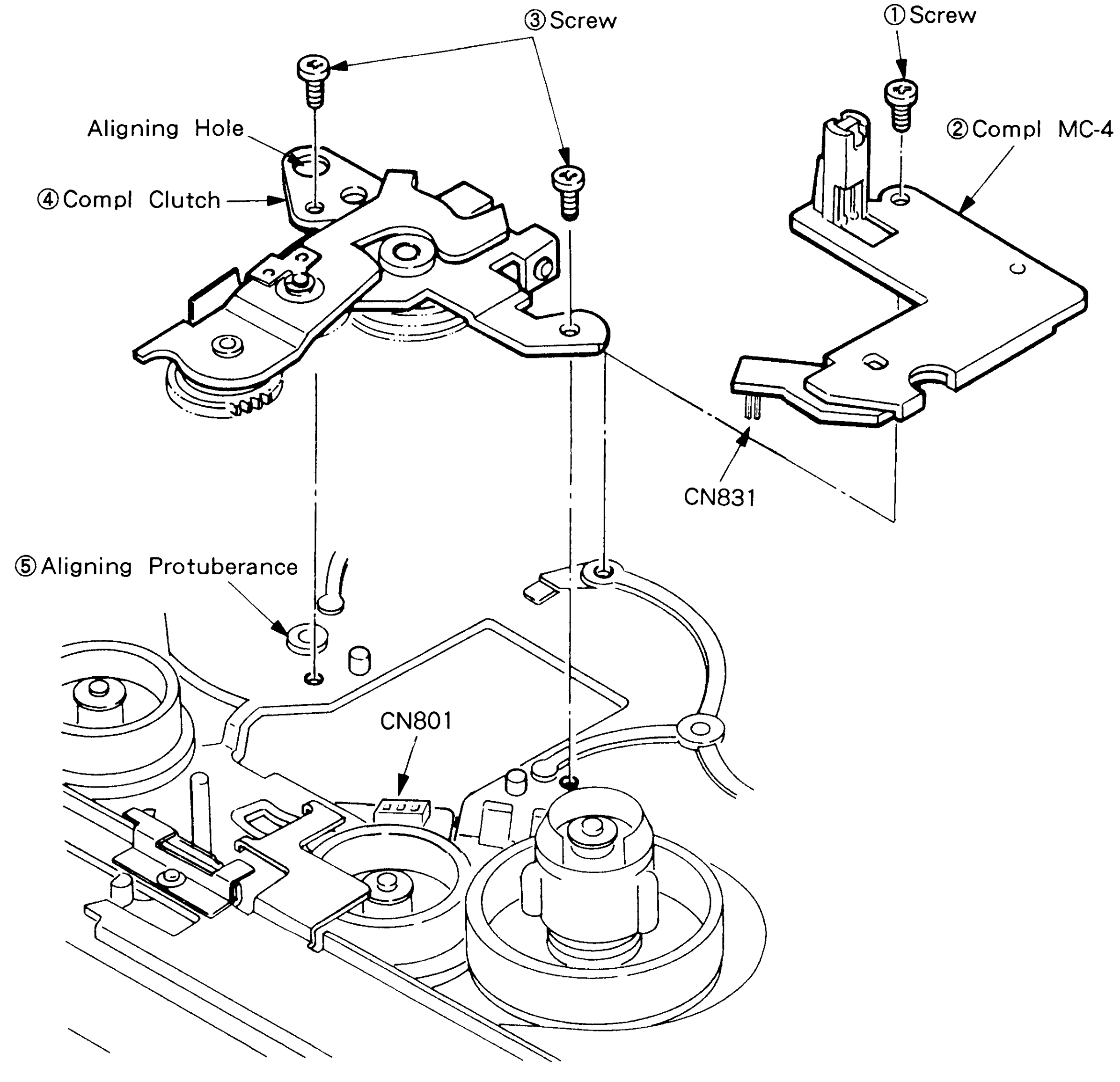

③Screw
①Screw
Aligning Hole
②Compl MC-4
④Compl Clutch
CN831
⑤Aligning Protuberance
CN801

Fig. 2-8-5. Compl Clutch

2-8-6. CLUTCH CHANGE LEVER AND CLUTCH LEVER ASS'Y (See Fig. 2-8-6.)

1. Removal

1) Remove the CAPSTAN BRAKE ASS'Y as instructed in Section 2-7-4.
2) Remove the REEL DRIVE BELT and the REEL PULLEY as instructed in Section 2-8-4.
3) Remove the SPRING COIL ①.
4) Unhook the hook ②, then remove the CLUTCH CHANGE LEVER ③.
5) Unhook the hook ⑤, then remove the CLUTCH LEVER ASS'Y ⑥.

2. Remounting

1) Mount the CLUTCH LEVER ASS'Y ⑥ onto the axle ⑦. Confirm that the hook ⑤ is hooked to the chassis.
2) Mount the CLUTCH CHANGE LEVER ③ onto the axle ⑧. Confirm that the hook ② is hooked to the chassis.
3) Hook the SPRING COIL ① between hooks ⑨ and ⑩.
4) Mount the REEL DRIVE BELT and the REEL PULLEY as instructed in Section 2-8-4.
5) Mount the CAPSTAN BRAKE ASS'Y as instructed in Section 2-7-4.

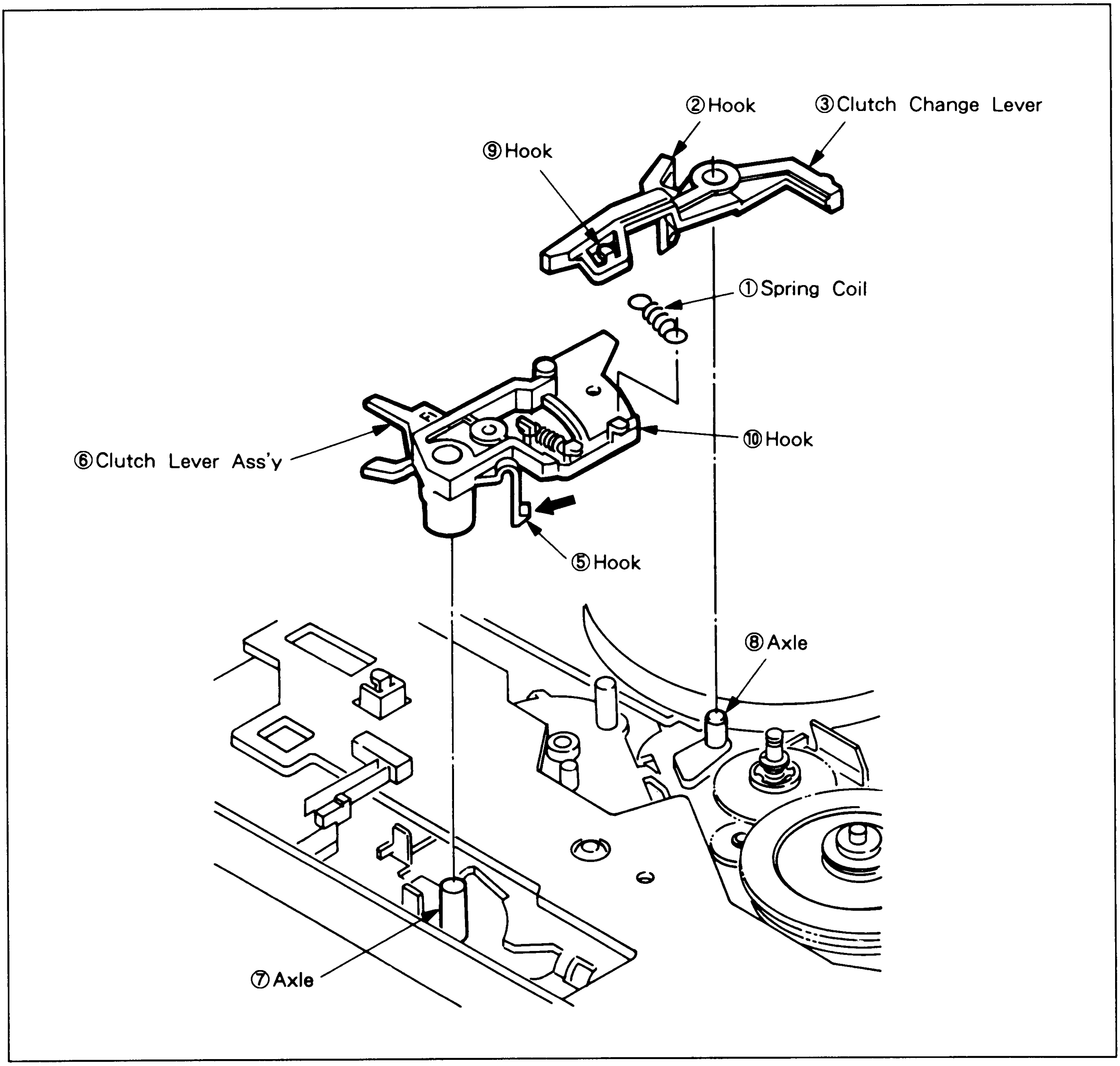

②Hook
③Clutch Change Lever
⑨Hook
①Spring Coil
⑩Hook
⑥Clutch Lever Ass'y
⑤Hook
⑧Axle
⑦Axle

Fig. 2-8-6. Clutch Change Lever and Clutch Lever Ass'y

2-9. CAPSTAN MOTOR (See Fig. 2-9-1.)

1. Removal

1) Remove the CAPSTAN BRAKE ASS'Y as instructed in Section 2-7-4.
2) Remove the CAPSTAN MOTOR ⑥ connector.
3) Remove the REEL DRIVE BELT ② from the CAPSTAN MOTOR PULLEY ①.
4) Remove the two screws ④ securing the COMPL CASSETTE MECHANISM TOP BOARD ③, then slide the TOP BOARD ③ backward.
5) Remove the three screws ⑤, then remove the CAPSTAN MOTOR ⑥.

Note: Be careful not to scratch or soil the capstan axle.

2. Remounting

1) Secure the CAPSTAN MOTOR ⑥ with the three screws ⑤.
2) Connect the CAPSTAN MOTOR ⑥ connector.
3) Attach the TOP BOARD ③ with the two screws ④.
4) Fit the REEL DRIVE BELT ② around the CAPSTAN MOTOR PULLEY ① and the REEL PULLEY ⑦.
5) Mount the CAPSTAN BRAKE ASS'Y as instructed in Section 2-7-4.

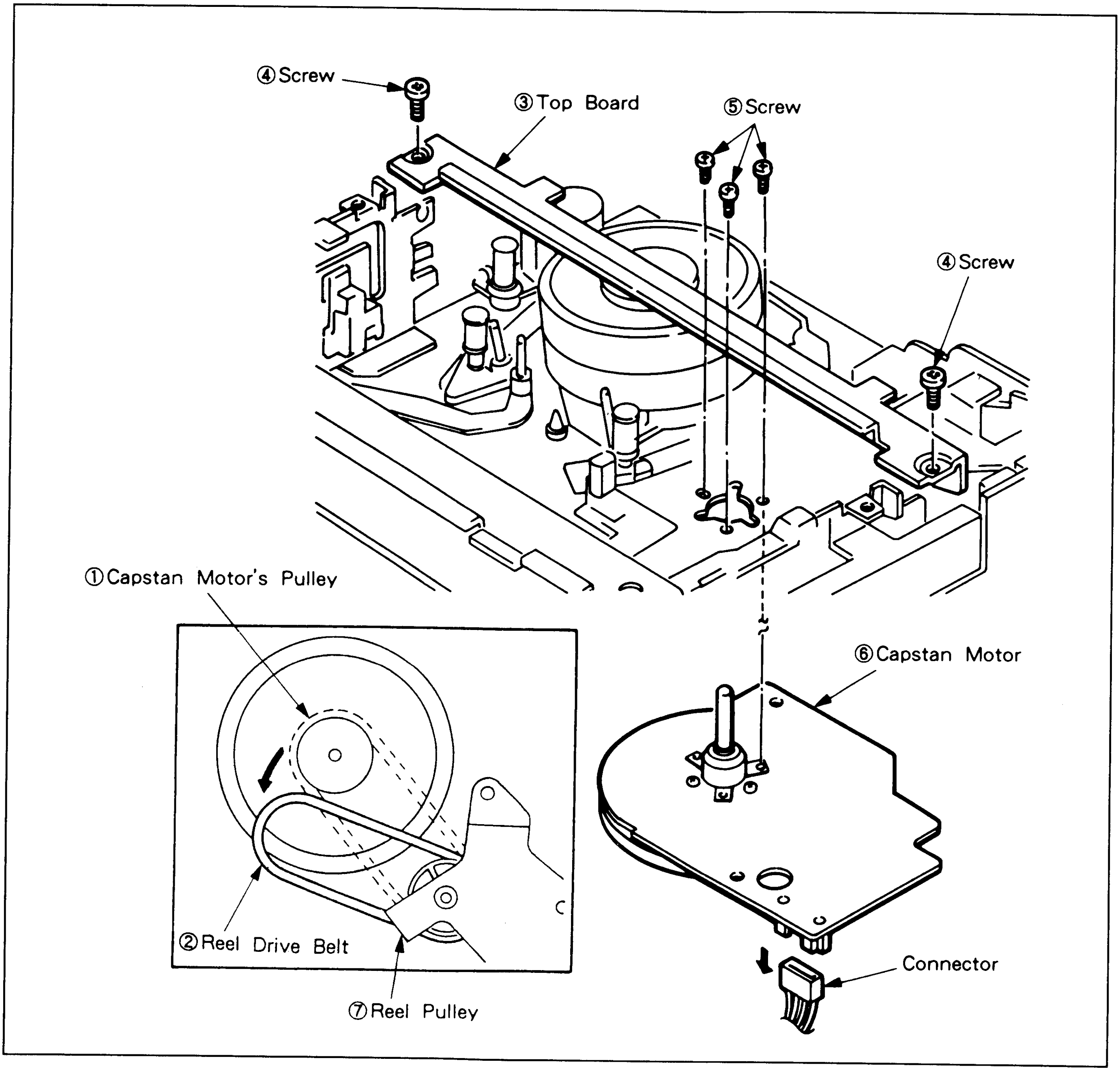

④Screw
③Top Board
⑤Screw
④Screw
①Capstan Motor's Pulley
⑥Capstan Motor
②Reel Drive Belt
⑦Reel Pulley
Connector

Fig. 2-9-1. Capstan Motor

2-10. TAPE GUIDE, FE HEAD LEVER ASS'Y AND IMPEDANCE ROLLER

2-10-1. ENTRANCE SIDE TAPE GUIDE (S), FE LEVER ASS'Y AND IMPEDANCE ROLLER (T) (See Fig. 2-10-1.)

1. Removal

1) Remove the special nut ①, then remove the SLEEVE ③ and the special washer ② (lower), in that order.
2) Remove the special washer ⑥, then remove the SPRING COIL ⑤.
3) Remove the FTE HEAD connector, then remove the FE HEAD LEVER ASS'Y ⑦.
4) Open the hook ⑩ a little and remove the IMPEDANCE BRACKET ⑨. Be careful not to open the hook ⑩ too much because it may bend or brake.
5) Remove the special washer ⑪, then remove the IMPEDANCE ROLLER (T) ⑫.

2. Remounting

1) Mount the IMPEDANCE ROLLER (T) ⑫, the special washer ⑪, and the IMPEDANCE BRACKET ⑨ onto the axle ⑭, in that order. Confirm that the hook ⑩ is firmly hooked to the IMPEDANCE ROLLER ⑫.
2) Mount the FE LEVER ASS'Y ⑦ onto the axle ⑧.
3) Hook the SPRING COIL ⑤ between the chassis notch ⑬ and the FE LEVER ASS'Y hook ④.
4) Mount the special washer ⑥, the special washer ② (lower), the SLEEVE ③, and the special nut ① onto the axle ⑧, in that order. At that time, do not excessively tighten the special nut ① to avoid idle rotation of the axle rivet.
5) Connect the connector to the FTE HEAD.

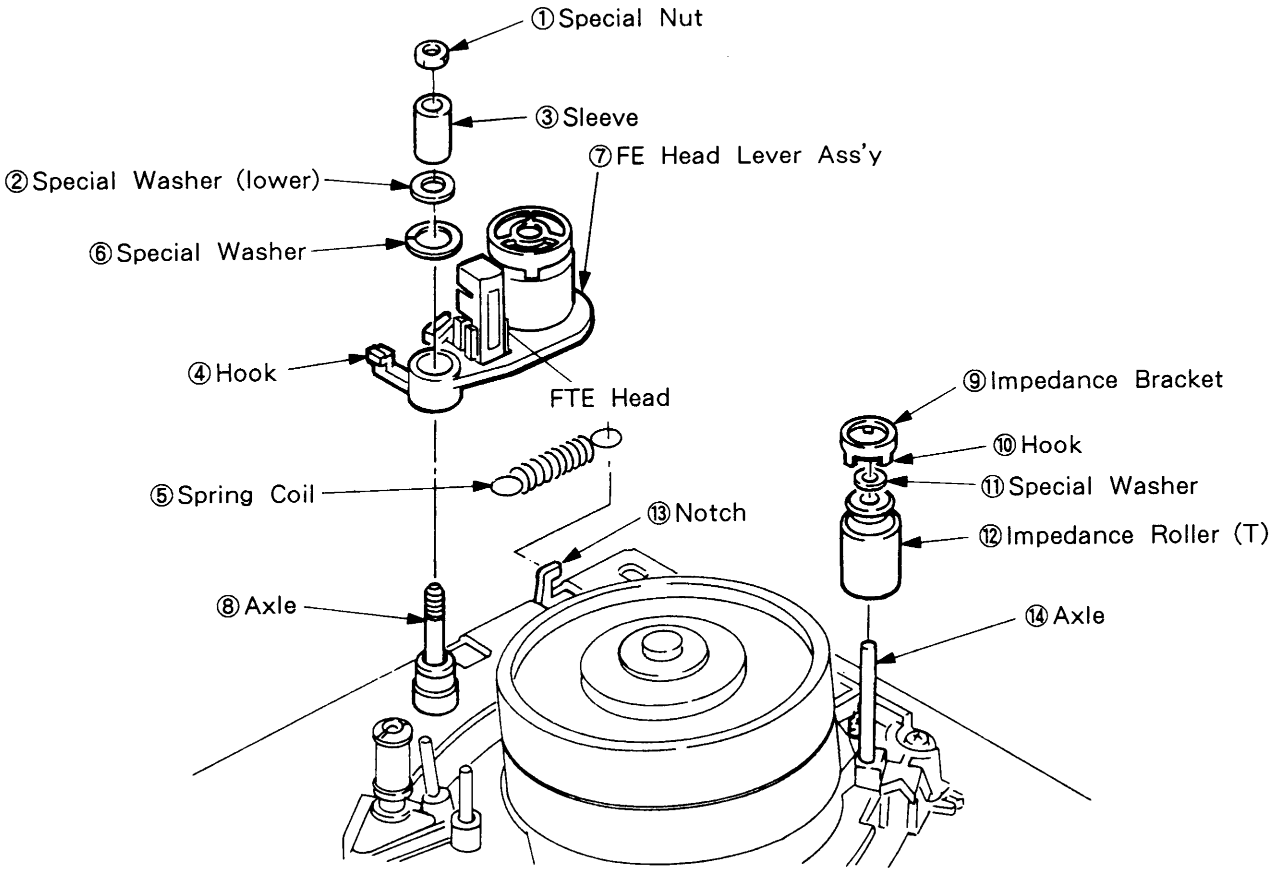

①Special Nut
③Sleeve
⑦FE Head Lever Ass'y
②Special Washer (lower)
⑥Special Washer
④Hook
FTE Head
⑨Impedance Bracket
⑩Hook
⑪Special Washer
⑤Spring Coil
⑬Notch
⑫Impedance Roller (T)
⑧Axle
⑭Axle

Fig. 2-10-1. Tape Guide (S), FE Lever Ass'y and Impedance Roller (T)

2-10-2. IMPEDANCE ROLLER (S), FTE HEAD (See Fig. 2-10-2.)

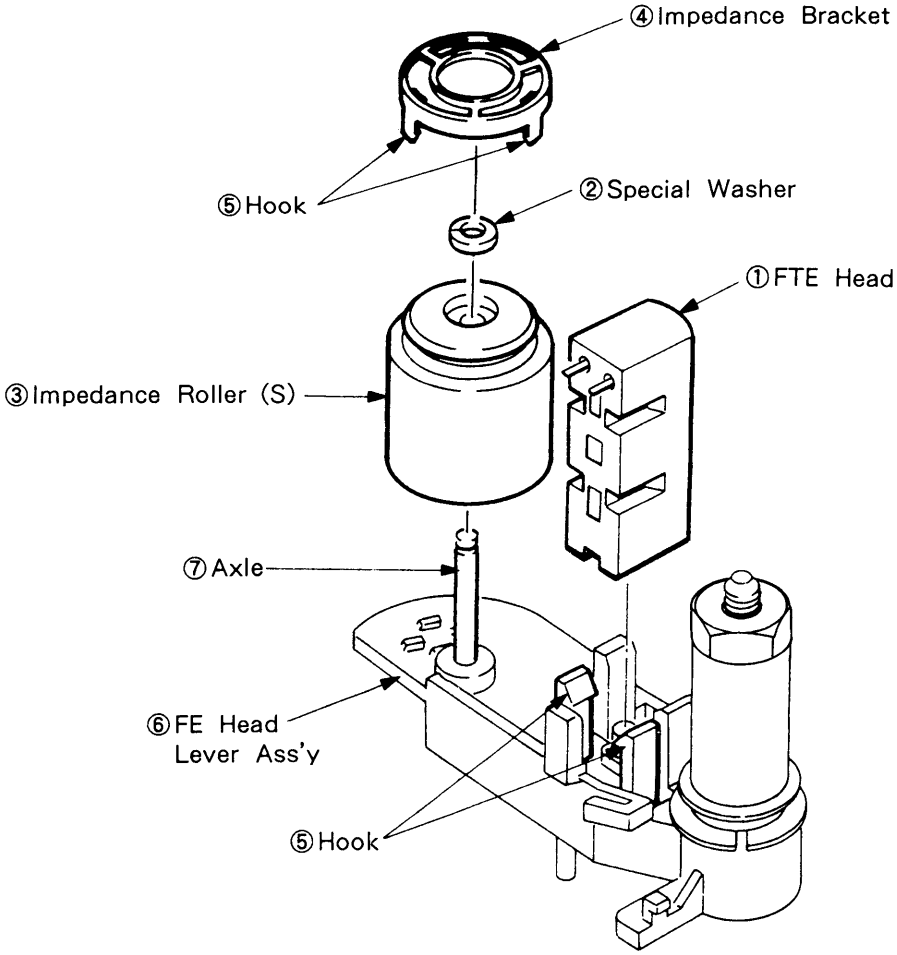
1. Removal

1) Remove the FTE HEAD (full track erase head) ① connector.
2) Open the hooks ⑧ a little and remove the IMPEDANCE BRACKET ④.
3) Remove the special washer ②, then remove the IMPEDANCE ROLLER (S) ③ and the washer ④.
4) Open the hooks ⑤ a little and remove the FTE HEAD ①.

Note: Be careful not to open the hooks too much because they may bend or brake.

2. Remounting

1) Mount the FTE HEAD ① onto the FE HEAD LEVER ASS'Y ⑥. Confirm that the hooks ⑤ are hooked to the FTE HEAD ①.
2) Mount the washer ④ and the IMPEDANCE ROLLER ③, in that order, onto the axle ⑦, then mount the special washer ②.
3) Mount the IMPEDANCE BRACKET ④ to the IMPEDANCE ROLLER (S) ③. Confirm that the hooks ⑧ are hooked to the IMPEDANCE ROLLER (S) ③.
4) Connect the FTE HEAD connection cable to the connector of the FTE HEAD ①.



④Impedance Bracket
⑤Hook
②Special Washer
①FTE Head
③Impedance Roller (S)
⑦Axle
⑥FE Head Lever Ass'y
⑤Hook

Fig. 2-10-2. Impedance Roller (S) and FTE Head

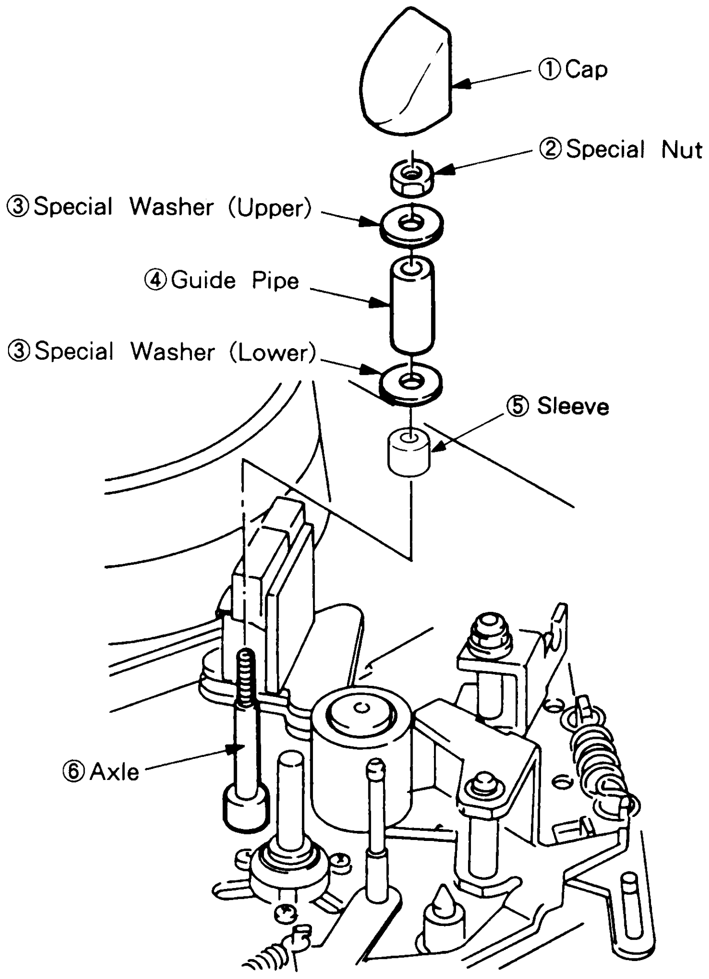
2-10-3. TAPE GUIDE (T) (See Fig. 2-10-3.)

1. Removal

1) Remove the CAP ①.
2) Remove the special nut ②, then remove the special washer ③ (upper), the GUIDE PIPE ④, the special washer ③ (lower), and the SLEEVE ⑤, in that order.

2. Remounting

1) Mount the SLEEVE ⑤, the special washer ③ (lower), the GUIDE PIPE ④, the special washer ③ (upper), and the special nut ②, in that order, onto the axle ⑥.
2) Mount the CAP ① onto the axle ⑥.



①Cap
②Special Nut
③Special Washer (Upper)
④Guide Pipe
③Special Washer (Lower)
⑤ Sleeve
⑥Axle

Fig. 2-10-3. Tape Guide (T)

2-11. DRUM SECTION

2-11-1. DRUM MOTOR (ROTOR, STATOR) (See Fig. 2-11-1.)

1. Removal

1) Remove the LOAD RACK only, as instructed in Section 2-4-1.
2) Remove the screw ①, then remove the CYLINDER EARTH ASS'Y ②.
3) Remove the two screws ③, then remove the ROTOR ④ and the SPACER.
4) Remove the STATOR board connector ⑩.
5) Remove the three screws ⑤, then remove the STATOR ⑥.

2. Remounting

1) Secure the STATOR ⑥ with the three screws ⑤.
2) Mount the SPACER ⑪ onto the AXLE ⑫.
3) While aligning the ROTOR oval hole ⑦ with the ROTOR DISK hole ⑧, attach the ROTOR with the two screws ③.
4) Insert the connector ⑩.
5) Mount the LOAD RACK as instructed in Section 2-4-1.
6) While aligning the CYLINDER EARTH ASS'Y ② protuberance with the chassis hole ⑨, secure it with the screw ①.

Notes: 1. Use a torque driver (VHJ-0014) for mounting the STATOR ⑥ and the ROTOR ④. Set fastening torque to 3 kg-cm.
2. When the drum unit has been replaced, do a tape path adjustment as instructed in Section 6-4 and do a PB PHASE adjustment of the servo circuit.

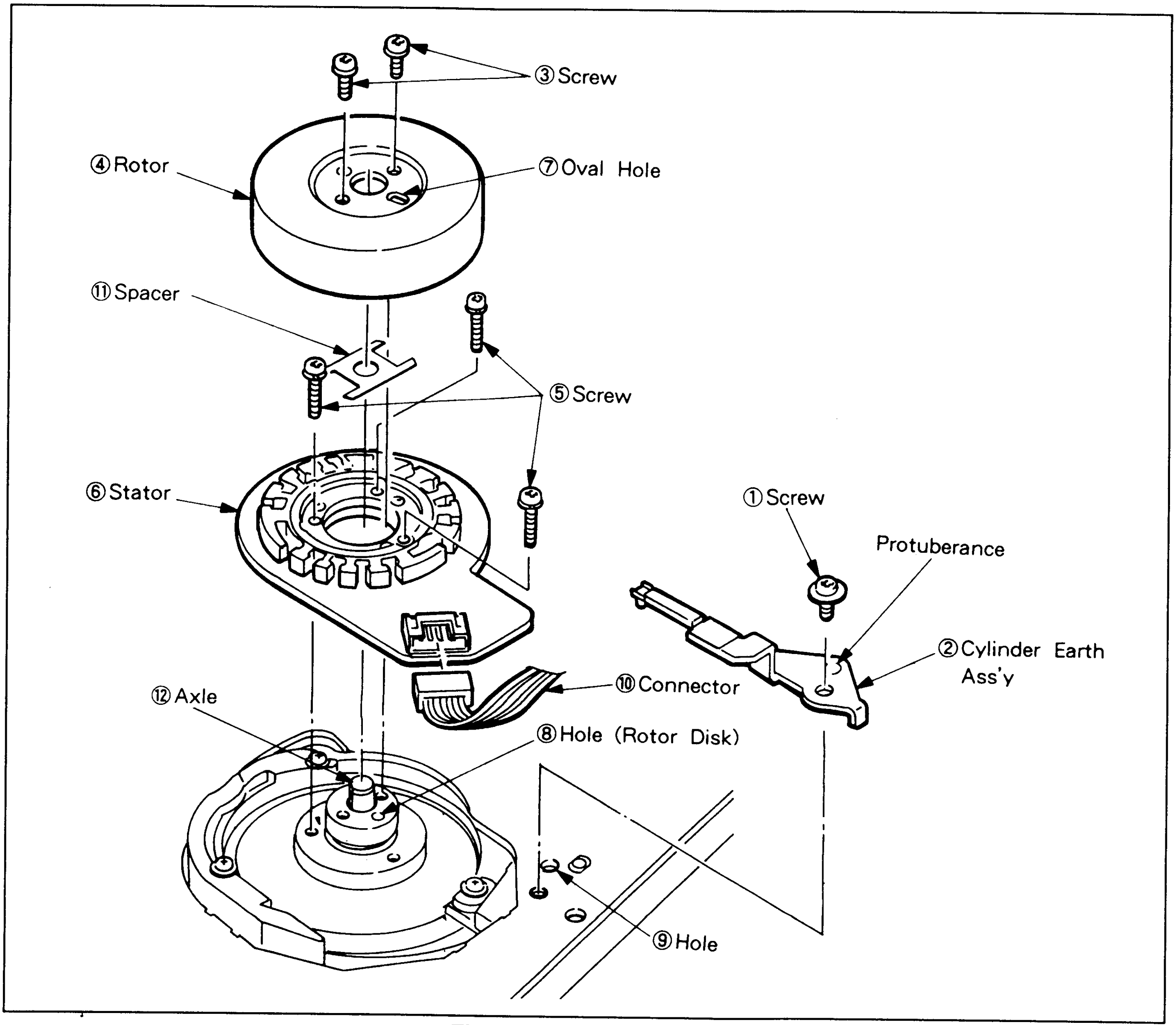

③ Screw
④ Rotor
⑦ Oval Hole
⑪ Spacer
⑤ Screw
⑥ Stator
① Screw
Protuberance
② Cylinder Earth Ass'y
⑩ Connector
⑫ Axle
⑧ Hole (Rotor Disk)
⑨ Hole

Fig. 2-11-1. Drum Motor

2-11-2. DRUM UNIT (See Fig. 2-11-2.)

1. Removal

1) For some models with the board located above the upper drum, remove the board.
2) Remove the flexible cable ① from the COMPL VP-1 (be careful not to pull the flexible cable in an upward direction).
3) Remove the LOAD RACK only, as instructed in Section 2-4-1.
4) Remove the three screws ②, then remove the drum unit ③.

Note: When removing and remounting the drum unit, handle it carefully to protect it from scratches and dirt.

2. Remounting

1) While aligning the drum unit ③ to the protuberance, attach it to the drum base (CYLINDER BASE) ⑤ with the three screws ②.
2) Mount the LOAD RACK as instructed in Section 2-4-1.
3) Insert the flexible cable into the COMPL VP-1.
4) Clean the drum unit.
5) Do the tape path adjustment as instructed in Section 6-4 and do the PB PHASE adjustment of the servo circuit.

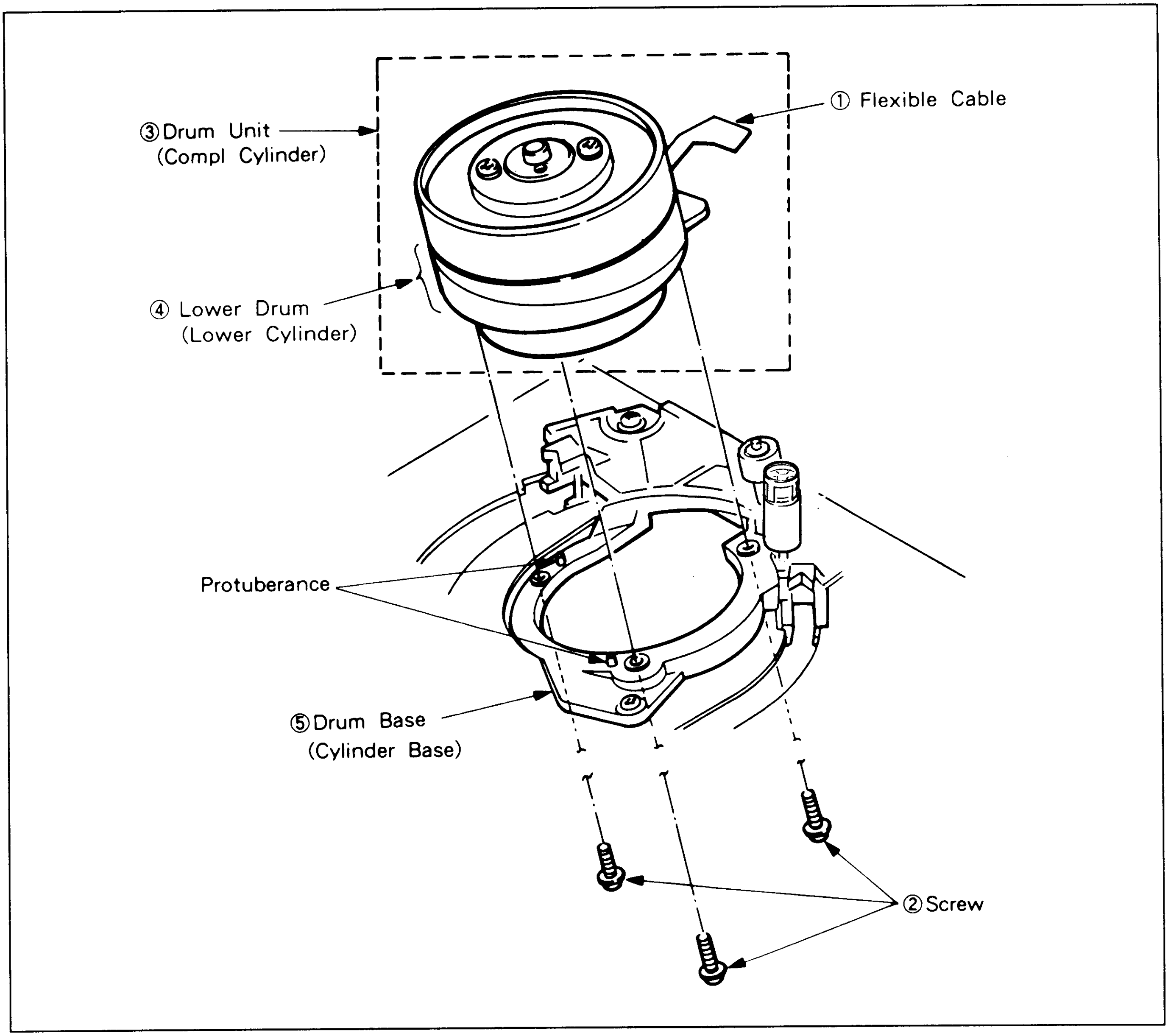

③ Drum Unit
(Compl Cylinder)
① Flexible Cable
④ Lower Drum
(Lower Cylinder)
Protuberance
⑤ Drum Base
(Cylinder Base)
② Screw

Fig. 2-11-2. Drum Unit (Compl Cylinder)

2-11-3. UPPER DRUM (Upper Cylinder)

1. Removal

1) Remove the two screws ①. (See Fig. 2-11-3.)
2) Turn the head removing jig (VHJ-0041) handle ② counterclockwise to lift up the stopper ③. (See Fig. 2-11-4.)
3) Insert the two long screws ④ of the jig into the screw holes ⑥ located on the head chip side of the upper drum (UPPER CYLINDER) ⑤, then secure them by turning the handle clockwise.
4) While holding the jig so that the upper drum ⑤ does not rotate, turn the handle ② clockwise to remove the upper drum.
5) Remove the jig from the upper drum.

Note: Handle parts carefully to protect the drum from scratches and dirt, and the video head from damage.

Disassembly

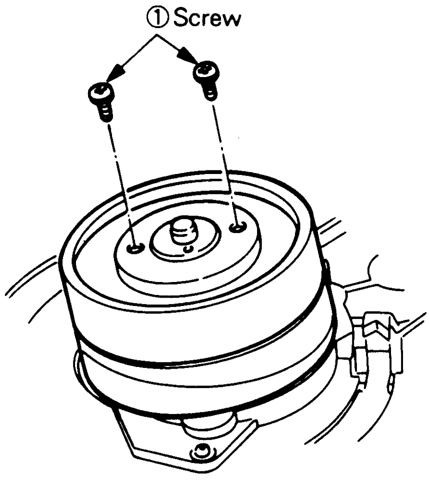


Fig. 2-11-3

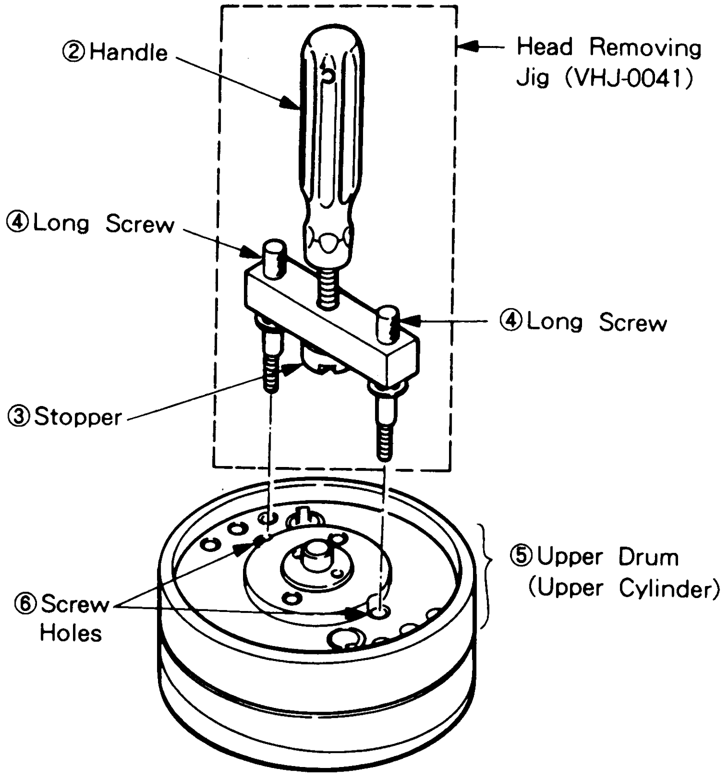

②Handle
Head Removing Jig (VHJ-0041)
④Long Screw
④Long Screw
③Stopper
⑤Upper Drum (Upper Cylinder)
⑥Screw Holes

Fig. 2-11-4

Upper Drum (Upper Cylinder)

2. Remounting (See Fig. 2-11-6.)

1) Confirm that surfaces where the flywheel and the upper drum (UPPER CYLINDER) are engaged or make contact are free from scratches and dirt.
2) The code name ① of the drum is printed on the video head side of the upper drum ⑤ SP CH-1 (channel A, plus azimuth). The code name ① is set within the rotary transformer terminal on the round hole side ② of the lower drum (LOWER CYLINDER), so that the two screw holes ③ of the upper drum are aligned with the two screw holes ④ of the flywheel. (Refer to 2-11-3 (3), "Recognizing the SP CH-1 Head Side.")
3) While keeping the upper drum ⑤ parallel to the lower drum (LOWER CYLINDER) ⑧, insert it completely into the flywheel.
4) Temporarily tighten the two screws ⑦ alternately a little at a time, then tighten them to a torque of 6 kg-cm using a torque driver (VHJ-0014) and a 3 mm bit (VHJ-0045).

Note: When the upper drum has been replaced, do a tape path adjustment as instructed in Section 6-4 and the PB PHASE adjustment of the servo circuit.

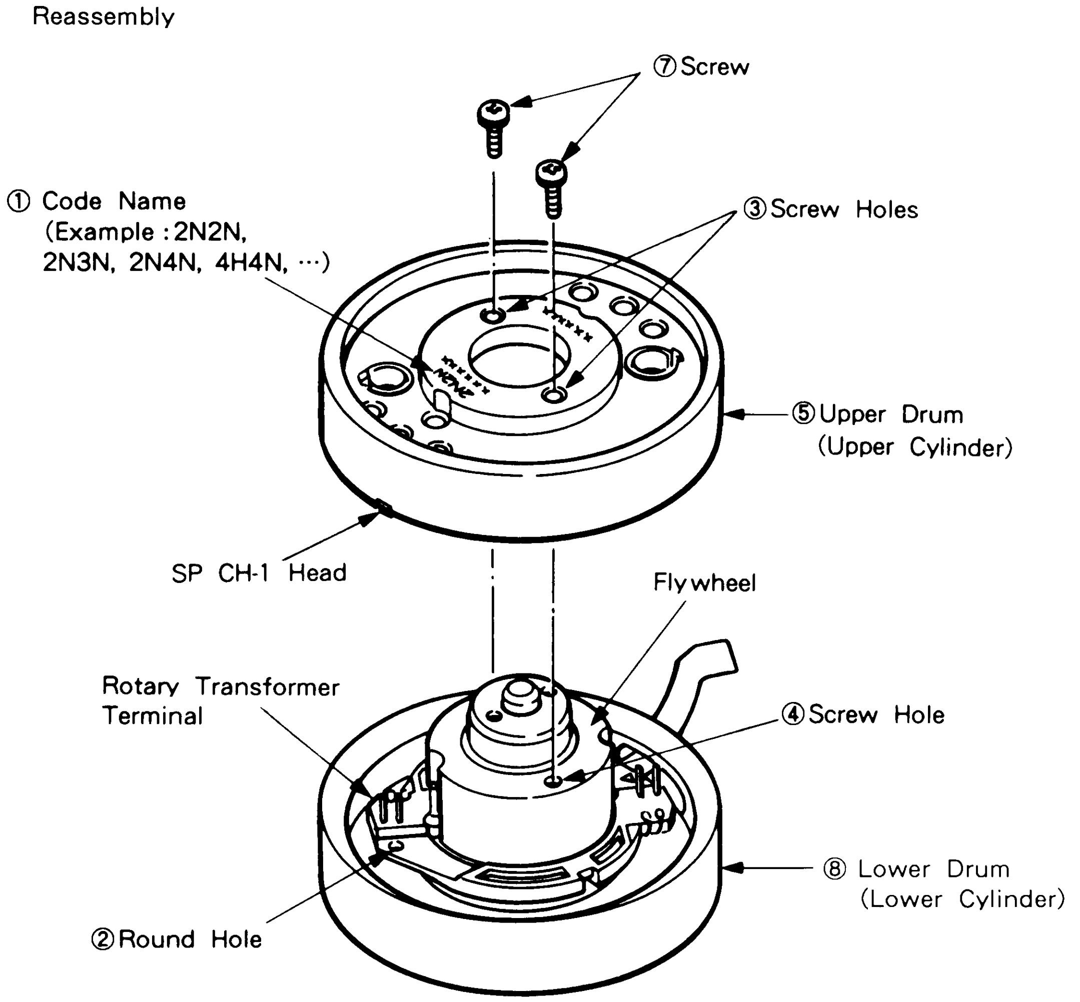

Reassembly
⑦Screw
① Code Name
(Example : 2N2N,
2N3N, 2N4N, 4H4N, ···)
③Screw Holes
⑤Upper Drum
(Upper Cylinder)
SP CH-1 Head
Flywheel
Rotary Transformer
Terminal
④Screw Hole
⑧ Lower Drum
(Lower Cylinder)
②Round Hole

Fig. 2-11-6

3. Recognizing the SP CH-1 Head Side

No playback picture can be obtained if the video head is not wired as a pair with the rotary transformer located inside the lower drum rotating section. Therefore, the mounting position should be matched when mounting the upper drum. In the P90 mechanism series, the code name of the drum is printed on the SP CH-1 (CH-A, plus azimuth) side as a mark for mounting the upper drum. (See Fig. 2-11-7.) This code name differs according to the drum type, but its basic form is as follows :

Code Name Form

④Ⓗ④Ⓝ-ⒹⓈ

A B C D E F

A = Number of head bases
B = "N" for normal audio
"H" for HI-FI audio
C = Number of heads
D = TV system ("N" or "P")
EF = Code for detailed classification. Depending on the drum type, it can also be just one character or a blank space.

Examples of Detailed Classification Codes
V = Head with level difference
D = Compatible with digital units
S = SVHS-compatible

Examples of Code Names
2N2N, 2N2N-V, 2N3N, 2N4N, 4H4N, 4H4N-O, 4H5N, 4H6N, 4H6N-S, 5H7N-SD

Moreover, there is a round hole with marking purposes on the SP CH-1 (CH-A, plus azimuth) side of the lower drum rotary transformer terminal. As shown in Fig. 2-11-8, there are two types of rotary transformer terminals (the number of pins differs according to the number of heads).

Note: When ordering parts such as drums (CYLINDERS), do not use the code names : always refer to the parts list and order using the specified part numbers.

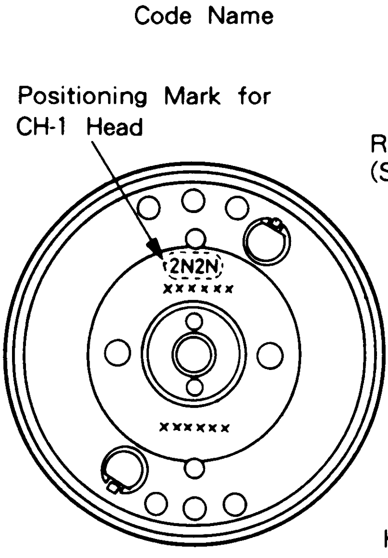

Code Name
Positioning Mark for CH-1 Head
2N2N
xxxxxx
xxxxxx

Fig. 2-11-7. Upper Drum

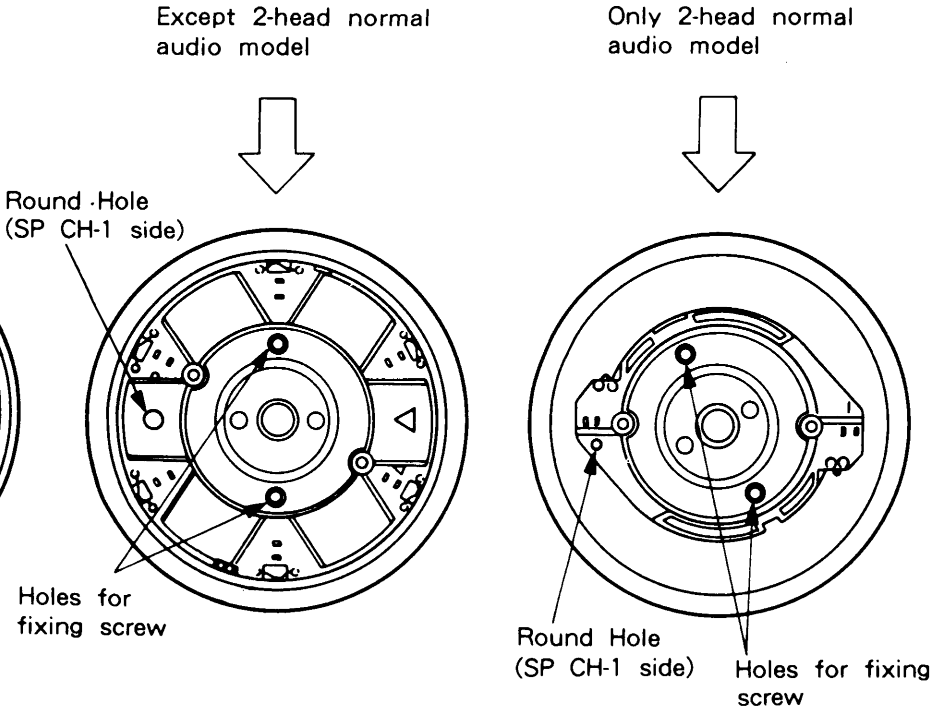

Except 2-head normal audio model
Only 2-head normal audio model
Round Hole (SP CH-1 side)
Holes for fixing screw
Round Hole (SP CH-1 side)
Holes for fixing screw

Fig. 2-11-8. Lower Drum

2-12. AUTO HEAD CLEANING MECHANISM (See Fig. 2-12)

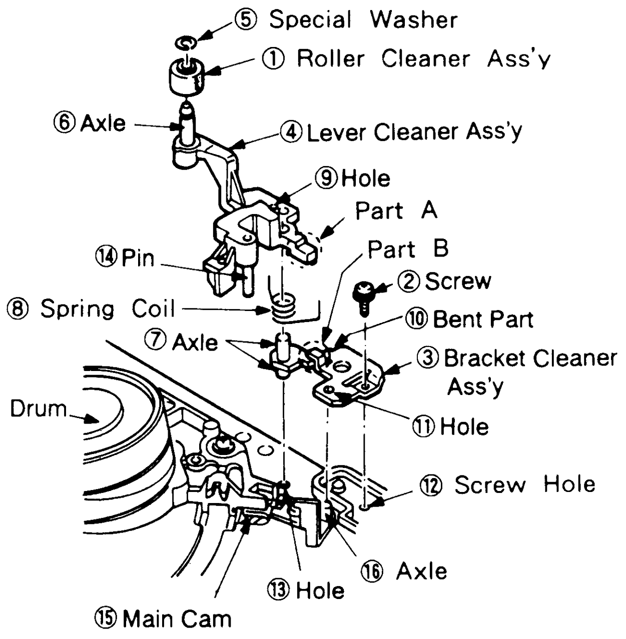
1. Removal

Notes:
- Do not hold the ROLLER CLEANER ASS'Y ① with your bare hands. Use tweezers and gloves not soiled with grease or dust, etc.
- When the cleaning function deteriorates and you are replacing only the ROLLER CLEANER ASS'Y ①, there is no need to do item 4) below.

1) Be sure that the ROLLER CLEANER ASS'Y ① is not pressed against a drum (cylinder).
2) Remove the COMPL VP-1 and the PRE-AMP BRACKET.
3) Remove screw ②, then lift up and remove the BRACKET CLEANER ASS'Y ③.
4) Hold the BRACKET CLEANER ASS'Y ③ on a flat surface with your finger and turn the LEVER CLEANER ASS'Y ④ 35° to 40° clockwise, then lift up the LEVER CLEANER ASS'Y and remove it.
5) Remove the special washer ⑤, then remove the ROLLER CLEANER ASS'Y ①.

2. Remounting

1) Mount the ROLLER CLEANER ASS'Y ① and the special washer ⑤ to the axle ⑥ of the LEVER CLEANER ASS'Y.
   Mount the ROLLER CLEANER ASS'Y ① so that the mark shown in Fig. A faces up. If the mark is down, noise may occur.
2) Mount the SPRING COIL ⑧ and the LEVER CLEANER ASS'Y ④ to the axle ⑦ of the BRACKET CLEANER ASS'Y. At the same time, hook the SPRING COIL ⑧ into the hole ⑨ of the LEVER CLEANER ASS'Y and the bent part ⑩ of the BRACKET CLEANER ASS'Y. Part A of the LEVER CLEANER ASS'Y should be under part B of the BRACKET CLEANER ASS'Y.
3) Attach the BRACKET CLEANER ASS'Y ③ to the screw hole ⑫ with the screw ②. Before tightening screw ②, insert the axle ⑯ into the hole ⑪ of the BRACKET CLEANER ASS'Y on a flat surface with your finger and the axle ⑦ into the hole ⑬ to match positions. The pin ⑭ of the LEVER CLEANER ASS'Y should run along the circumference of the MAIN CAM ⑮ so that the MAIN CAM will not come off.
4) The upper side of the lower drum should be within approximately. 2mm from the lower side of the ROLLER CLEANER ASS'Y as shown in Fig. B.
5) Mount the PRE-AMP BRACKET and the COMPL VP-1.


⑤ Special Washer
① Roller Cleaner Ass'y
⑥ Axle
④ Lever Cleaner Ass'y
⑨ Hole
Part A
⑭ Pin
Part B
② Screw
⑧ Spring Coil
⑩ Bent Part
⑦ Axle
③ Bracket Cleaner Ass'y
Drum
⑪ Hole
⑫ Screw Hole
⑯ Axle
⑬ Hole
⑮ Main Cam

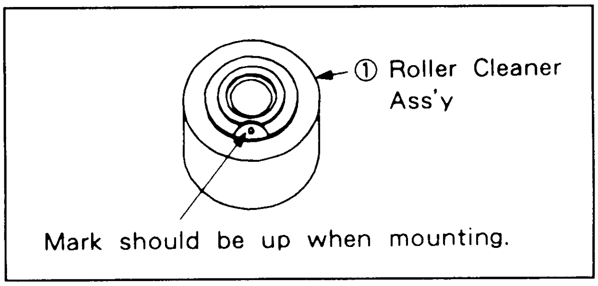

① Roller Cleaner Ass'y
Mark should be up when mounting.

Fig. A

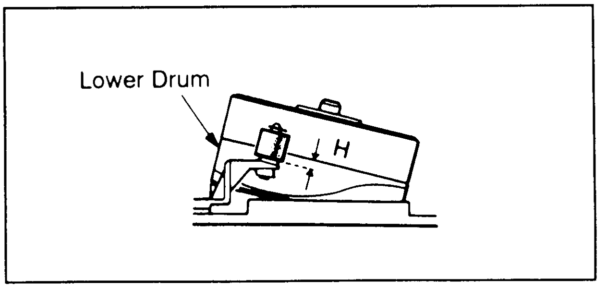
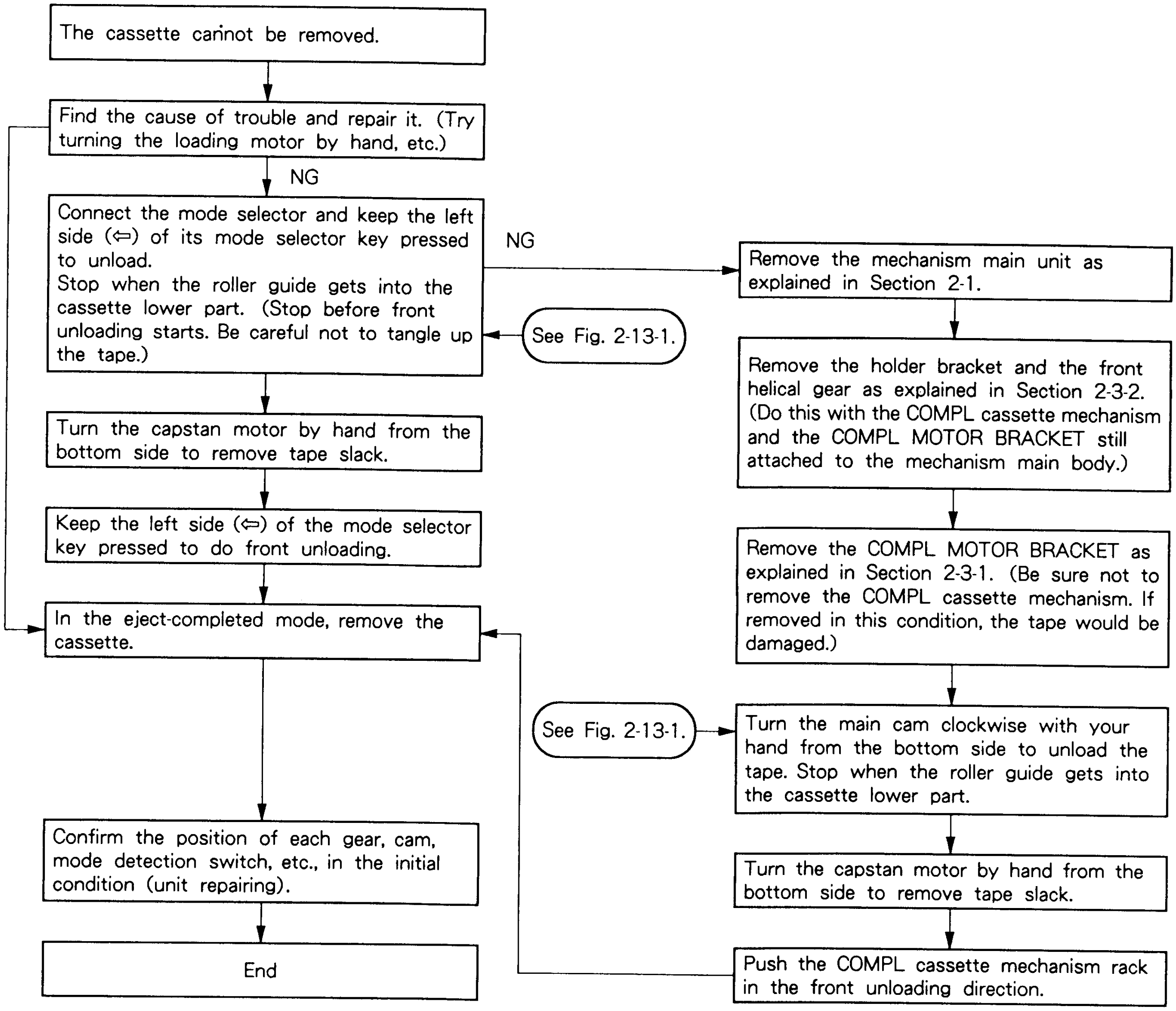

Lower Drum
H

Fig. B

Fig. 2-12. Auto Head Cleaning Mechanism

2-13. HOW TO PROCEED WHEN THE CASSETTE CANNOT BE REMOVED



The cassette cannot be removed.

Find the cause of trouble and repair it. (Try turning the loading motor by hand, etc.)

NG

Connect the mode selector and keep the left side (⇦) of its mode selector key pressed to unload.
Stop when the roller guide gets into the cassette lower part. (Stop before front unloading starts. Be careful not to tangle up the tape.)

See Fig. 2-13-1.

Turn the capstan motor by hand from the bottom side to remove tape slack.

Keep the left side (⇦) of the mode selector key pressed to do front unloading.

In the eject-completed mode, remove the cassette.

Confirm the position of each gear, cam, mode detection switch, etc., in the initial condition (unit repairing).

End

NG

Remove the mechanism main unit as explained in Section 2-1.

Remove the holder bracket and the front helical gear as explained in Section 2-3-2. (Do this with the COMPL cassette mechanism and the COMPL MOTOR BRACKET still attached to the mechanism main body.)

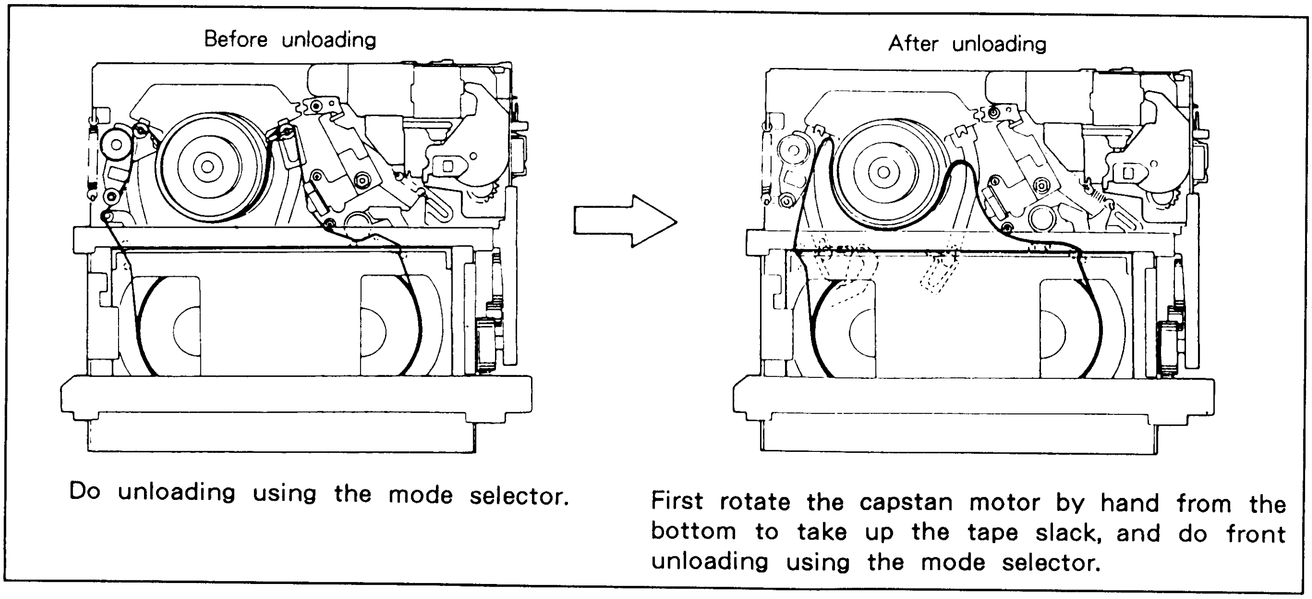
Remove the COMPL MOTOR BRACKET as explained in Section 2-3-1. (Be sure not to remove the COMPL cassette mechanism. If removed in this condition, the tape would be damaged.)

See Fig. 2-13-1.

Turn the main cam clockwise with your hand from the bottom side to unload the tape. Stop when the roller guide gets into the cassette lower part.

Turn the capstan motor by hand from the bottom side to remove tape slack.

Push the COMPL cassette mechanism rack in the front unloading direction.



Before unloading

After unloading

Do unloading using the mode selector.

First rotate the capstan motor by hand from the bottom to take up the tape slack, and do front unloading using the mode selector.

Fig. 2-13-1

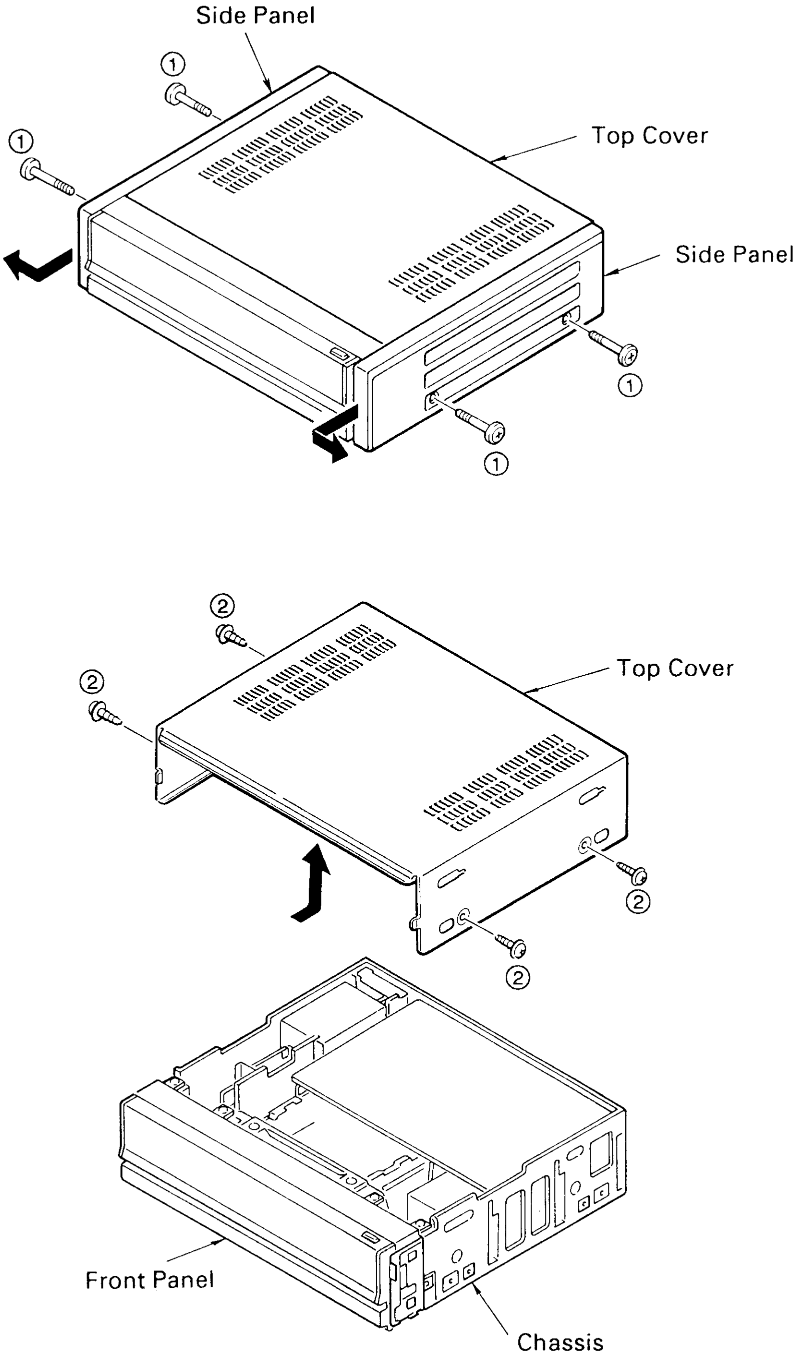
3. CABINET DISASSEMBLY AND CIRCUIT BOARD LOCATIONS

3-1. CABINET DISASSEMBLY

3-1-1. REMOVING THE TOP COVER (See Fig. 3-1-1.)

1. Remove the four screws ① on the side panel, and slide it out towards the front of the unit and remove.
2. Remove the four screws ② on the sides of the top cover, and while sliding it backwards slightly, lift it up and remove as shown by the arrow.

M-HN4QS/U-1



Side Panel
①
①
Top Cover
Side Panel
①
①
②
②
Top Cover
②
②
Front Panel
Chassis

Fig. 3-1-1

3-1-2. REMOVING THE FRONT CABINET (See Fig. 3-1-2.)

1. Remove the two screws ③ and the two stands. Next, remove the seven screws ④ and the bottom lid.
2. Remove the four screws ⑤ at the top of the front cabinet.
3. Press the lock button and open the door panel. Using a screwdriver, etc. push open the six clamps (A) of the front cabinet in the direction of the arrow, pull the front cabinet forwards, rotate it slightly as shown by the arrow, and remove it.
4. Remove the two screws ⑥, and then remove the TB-4 PWB. (Refer to figure in circular.)

3-1-3. REMOVING THE DOOR PANEL (See Fig. 3-1-3.)

After removing the top cover and the front cabinet:

1. With the door panel open, pull out shaft (B) in the direction of the arrow.
2. Remove the tip of spring (C) from groove (D) of the bracket. While drawing the right edge of the door panel towards you, pull it 15 mm in the direction of arrow (E) and remove it from fixed shaft (F).
3. Unlock the two sockets by pulling the frame, and disconnect the two flat cables.
4. To remove the TM-1 or TM-2 PWB:
   Because both PWBs are linked by the connector, remove the red screw ⑦, press open the six clamps (G), lift up both PWBs together, and remove them from the chassis.
5. Remove the four screws (not shown in the figure) at the bottom of the door panel and remove the cover from the door panel.

M-HP4QS/G2-2

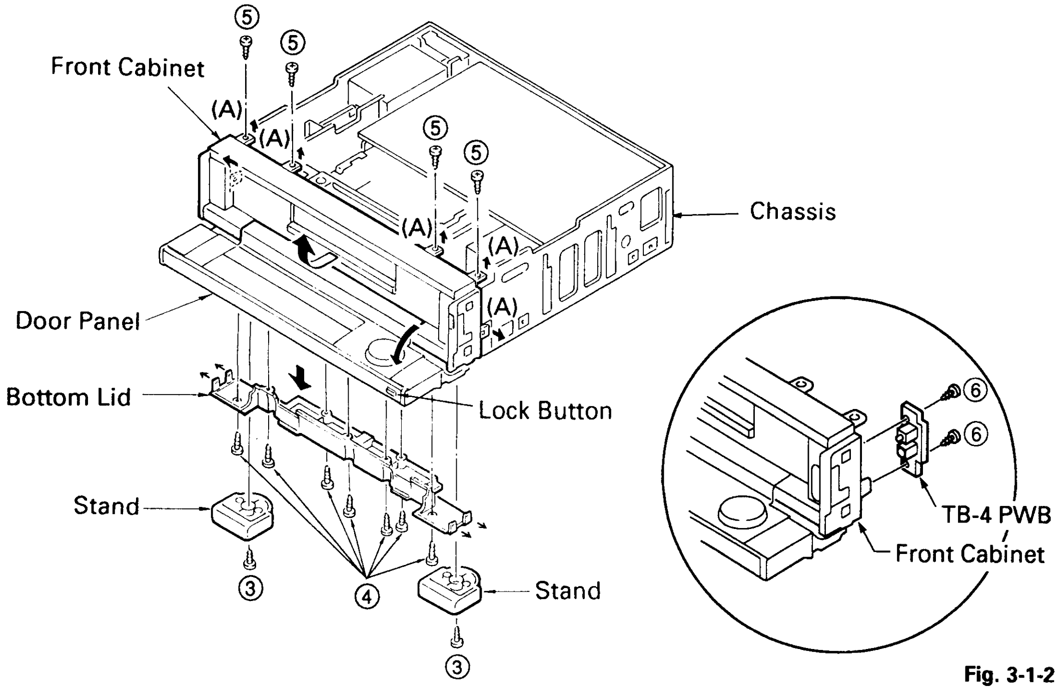

⑤
⑤
Front Cabinet
(A)
(A)
⑤
⑤
Chassis
(A)
(A)
(A)
Door Panel
Bottom Lid
Lock Button
Stand
③
④
Stand
③
⑥
⑥
TB-4 PWB
Front Cabinet

Fig. 3-1-2

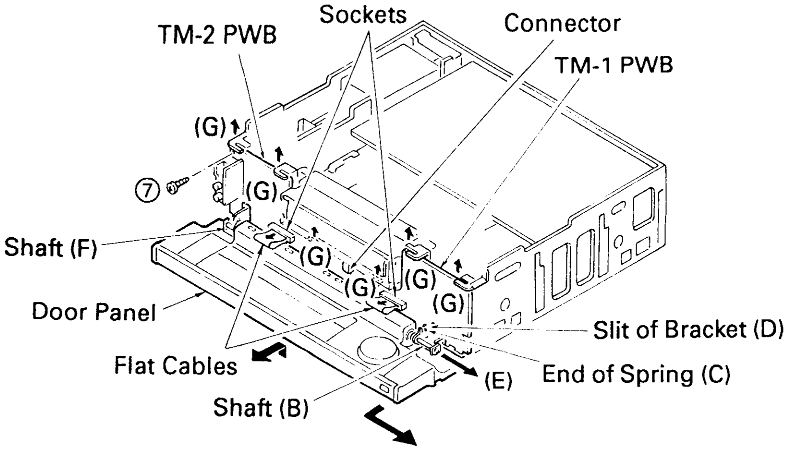

TM-2 PWB
Sockets
Connector
TM-1 PWB
(G)
⑦
(G)
Shaft (F)
(G)
(G)
(G)
(G)
Door Panel
Slit of Bracket (D)
Flat Cables
(E)
End of Spring (C)
Shaft (B)

Fig. 3-1-3

3-2. CIRCUIT BOARD LOCATIONS

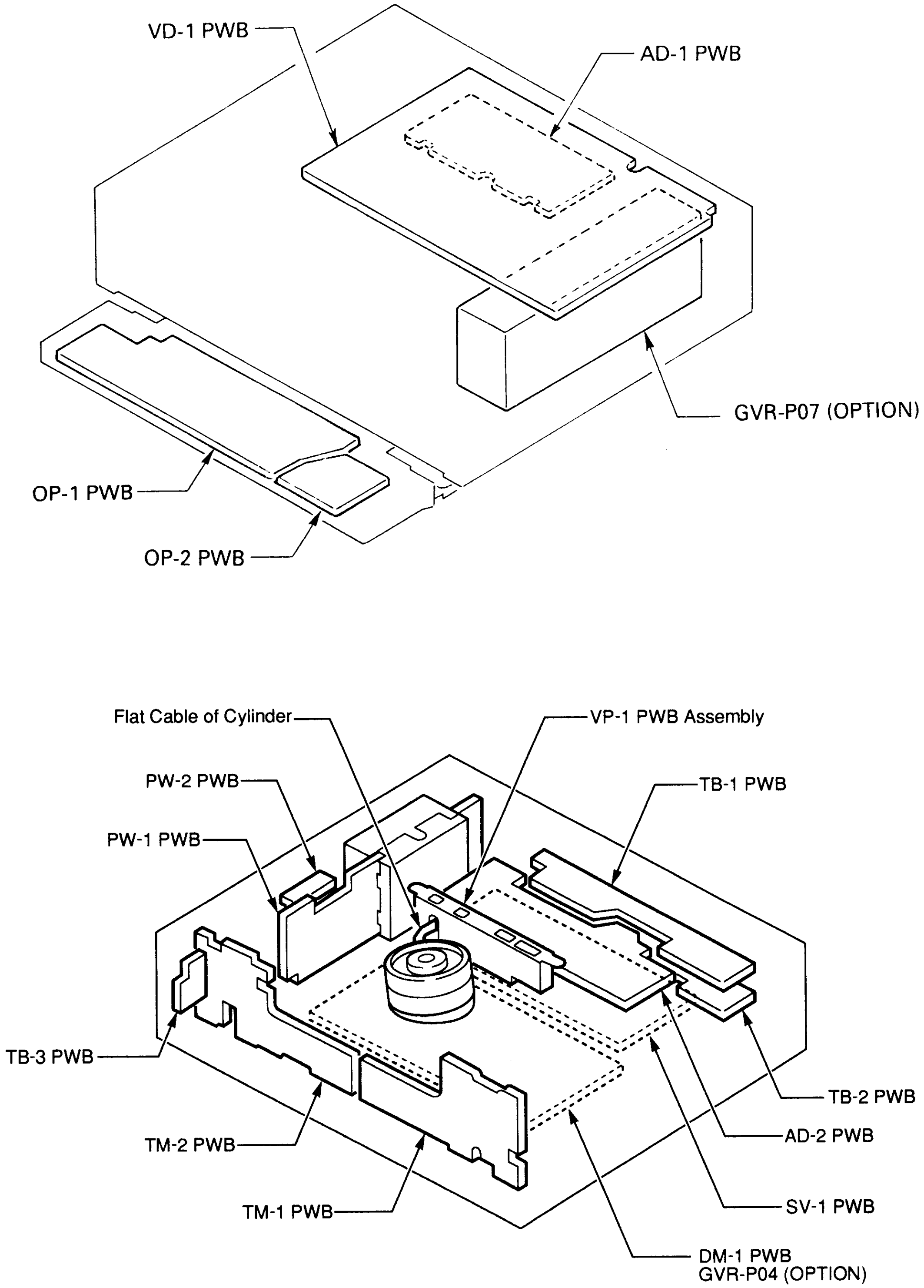
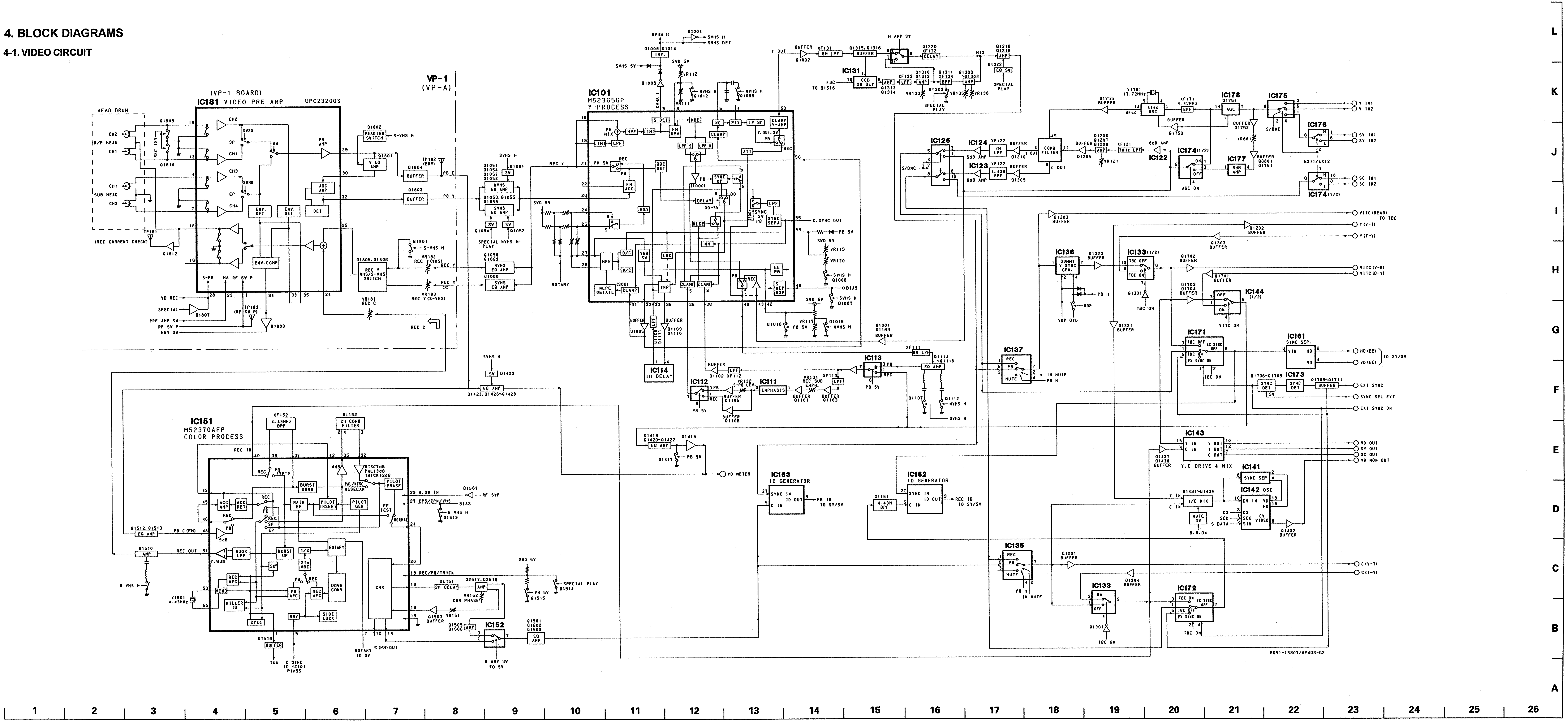

VD-1 PWB
AD-1 PWB
GVR-P07 (OPTION)
OP-1 PWB
OP-2 PWB
Flat Cable of Cylinder
VP-1 PWB Assembly
PW-2 PWB
TB-1 PWB
PW-1 PWB
TB-3 PWB
TB-2 PWB
AD-2 PWB
TM-2 PWB
SV-1 PWB
TM-1 PWB
DM-1 PWB
GVR-P04 (OPTION)

Fig. 3-2-1

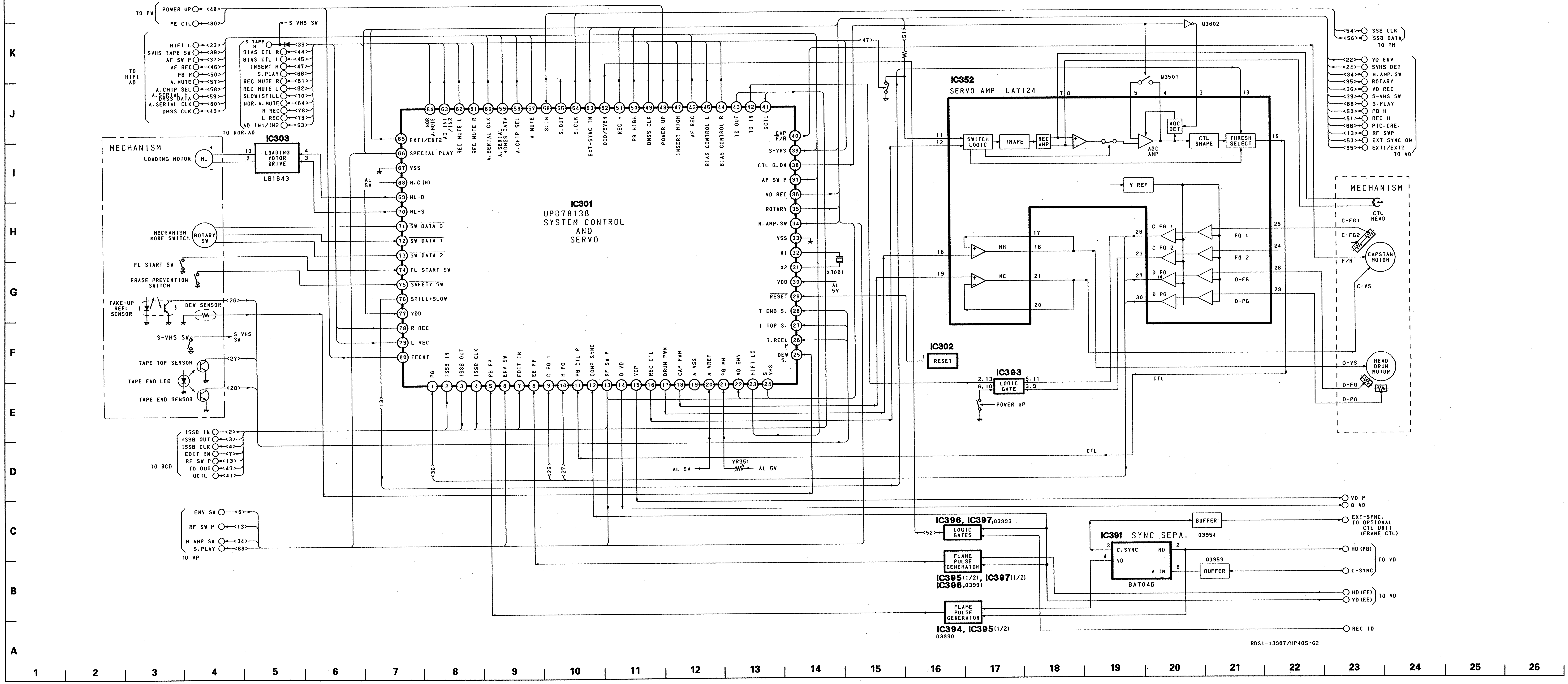
NOTES

4. BLOCK DIAGRAMS

4-1. VIDEO CIRCUIT


VP-1
(VP-A)
(VP-1 BOARD)
IC181 VIDEO PRE AMP
UPC2320GS
HEAD DRUM
R/P HEAD
SUB HEAD
CH1
CH2
CH3
CH4
SW30
SP
EP
PB AMP
AGC AMP
DET
ENV. DET
ENV. COMP
REC CURRENT CHECK
TP181
Q1812
Q1809
Q1810
VD REC
SPECIAL
PRE AMP SW
RF SW P
ENV SW
Q1807
Q1808
TP183 (RF SW P)
Q1802 PEAKING SWITCH
S-VHS H
Y EQ AMP
Q1801
TP182 (ENV)
Q1804 BUFFER
Q1803 BUFFER
PB C
PB Y
Q1805, Q1806
REC Y VHS/S-VHS SWITCH
Q1801 S-VHS H
VR182 REC Y (VHS)
VR183 REC Y (S-VHS)
VR181 REC C
REC C
REC Y
NVHS EQ AMP
SVHS EQ AMP
SPECIAL NVHS H PLAY
Q1081
Q1084
Q1052
IC101 M52365GP Y-PROCESS
FM MIX
HPF
LIM
FM DEM
MOE
LPF
S DET
NC
FIX
LP NC
CLAMP Y-AMP
Y OUT SW
ATT
DOC DET
FM AGC
DELAY
SYNC UP
MLDC
MM
LNC
EE PB
SYNC SEPA
C. SYNC OUT
S NEP NSP
D/C
W/C
YNR SW
MPE
NLPE DETAIL
CLAMP
YNR
ROTARY
SVD 5V
VR112
VR111
Q1012
Q1088
Q1006
Q1009 Q1014 INV.
Q1004 SVHS H SVHS DET
NVHS H
SVHS SW
VR119
VR120
Q1008
BIAS
Q1007
VR117
Q1015
Q1018
Q1001 Q1163 BUFFER
Q1019 LPF
Q1109 Q1110
IC114 1H DELAY
BUFFER
Y OUT
BUFFER Q1002
XF131 6M LPF
Q1315, Q1316 BUFFER
IC131 CCD 2H DLY
FSC TO Q1516
XF133 LPF
Q1310 Q1312 AMP
Q1311 XF134 BPF
Q1308 AMP
Q1313 Q1314
VR133
Q1309
VR135
VR136
SPECIAL PLAY
H AMP SW
Q1320 XF132 DELAY
MIX
Q1318 Q1319 AMP
Q1322 EQ SW
IC125
S/BNC
IC124 6dB AMP
XF122 TH LPF
IC123 6dB AMP
XF122 4.43M BPF
Q1210
Q1209
Q1755 BUFFER
X1701 17.72MHz
4fsc OSC
XF171 4.43MHz BPF
IC178 AGC
IC175
Q1750
Q1752
VR881
Q8801 Q1751
COMB FILTER
Q1206 Q1207 Q1208 AMP
XF121 7MHz LPF
Q1205
VR121
IC122
IC174(1/2)
IC177 6dB AMP
AGC ON
IC176
IC174(1/2)
V IN1
V IN2
SY IN1
SY IN2
SC IN1
SC IN2
EXT1/EXT2
V1TC (READ) TO TBC
Y (V-T)
Y (T-V)
Q1203 BUFFER
Q1202 BUFFER
Q1303 BUFFER
IC136 DUMMY V SYNC GEN.
Q1323 BUFFER
IC133(1/2) TBC OFF TBC ON
Q1702 BUFFER
Q1701 BUFFER
V1TC (V-B)
V1TC (B-V)
Q1703 Q1704 BUFFER
IC144 (1/2)
V1TC ON
VDP OVD
Q1321 BUFFER
Q1301
TBC ON
IC137 REC PB MUTE
IN MUTE
PB H
IC171 TBC OFF TBC ON EX SYNC
IC161 SYNC SEP. VIN HD VD
HD (EE)
VD (EE)
TO SY/SV
Q1706~Q1708
IC173 SYNC DET
Q1709~Q1711 BUFFER
EXT SYNC
SYNC SEL EXT
EXT SYNC ON
IC143 Y.C DRIVE & MIX
Q1437 Q1438 BUFFER
VD OUT
SY OUT
SC OUT
VD MON OUT
IC141 SYNC SEP
IC142 OSC
Q1431~Q1434 Y/C MIX
MUTE SW
B.B. ON
CS SCK S DATA
Q1402 BUFFER
IC135 REC PB MUTE
Q1201 BUFFER
IC133 ON OFF
Q1304 BUFFER
IC172 TBC ON TBC OFF EX SYNC
C (V-T)
C (T-V)
8DV1-1390T/HP4DS-02
IC113
XF111 6M LPF
Q1114~Q1116 EQ AMP
Q1107
Q1112 NVHS H
SVHS H
IC112
Q1102 XF112
VR132 S-PB LEV.
IC111 EMPHASIS
VR131 REC SUB EMPH.
XF113
Q1101
Q1103
Q1105
Q1106
PB 5V
SVHS H
SV Q1429
Q1423, Q1426~Q1428 EQ AMP
IC151 M52370AFP COLOR PROCESS
XF152 4.43MHz BPF
DL152 2H COMB FILTER
NTSC7dB PAL13dB TRICK+2dB
PAL/NTSC MESECAM
PILOT ERASE
BURST DOWN
MAIN BH
PILOT INSERT
PILOT GEN
ACC AMP
ACC DET
EE TEST
NORMAL
630K LPF
BURST UP
1/2
2fs VOC
ROTARY
DOWN CONV
CNR
REC APC
PB APC
VCXO
KILLER ID
MMV
SIDE LOCK
2fsc
X1501 4.43MHz
H.SW IN
CPS/CPN/VHS
Q1507 RF SWP
BIAS
Q1519
REC/PB/TRICK
DL151 2H DELAY
Q2517, Q2518 AMP
VR152 CNR PHASE
VR151
Q1503 BUFFER
Q1505 Q1506 AMP
IC152
H AMP SW TO SV
Q1501 Q1502 Q1509 EQ AMP
SVD 5V
Q1515
SPECIAL PLAY Q1514
Q1512, Q1513 EQ AMP
PB C (FM)
Q1510 AMP
REC OUT
N VHS H
Q1516 BUFFER
fsc
C SYNC TO IC101 Pin55
ROTARY TO SV
C (PB) OUT
Q1418 Q1420~Q1422 EQ AMP
Q1419
Q1417
VD METER
IC163 ID GENERATOR SYNC IN C IN ID OUT
PB ID TO SY/SV
IC162 ID GENERATOR
XF181 4.43M BPF
REC ID TO SY/SV
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26
L K J I H G F E D C B A

4-2. SYSTEM CONTROL & SERVO CIRCUIT



IC301
UPD78138
SYSTEM CONTROL AND SERVO
IC303
LOADING MOTOR DRIVE
LB1643
IC352
SERVO AMP LA7124
SWITCH LOGIC
TRAPE
REC AMP
AGC AMP
AGC DET
CTL SHAPE
THRESH SELECT
V REF
Q3501
Q3602
IC302
RESET
IC393
LOGIC GATE
POWER UP
IC396, IC397, Q3993
LOGIC GATES
IC395(1/2), IC397(1/2)
IC396, Q3991
FLAME PULSE GENERATOR
IC394, IC395(1/2)
Q3990
IC391 SYNC SEPA.
BA7046
C. SYNC
HD
VD
V IN
BUFFER
Q3954
Q3953
X3001
VR351
AL 5V
MECHANISM
LOADING MOTOR
ML
MECHANISM MODE SWITCH
ROTARY SW
FL START SW
ERASE PREVENTION SWITCH
TAKE-UP REEL SENSOR
DEW SENSOR
S-VHS SW
TAPE TOP SENSOR
TAPE END LED
TAPE END SENSOR
CTL HEAD
C-FG1
C-FG2
F/R
CAPSTAN MOTOR
C-VS
HEAD DRUM MOTOR
D-VS
D-FG
D-PG
FG 1
FG 2
D-FG
D-PG
C FG 1
C FG 2
D FG
D PG
MH
MC
CTL
TO PW
POWER UP
FE CTL
TO HIFI AD
HIFI L
SVHS TAPE SW
AF SW P
AF REC
PB H
A.MUTE
A.CHIP SEL
A.SERIAL DMSS DATA
A.SERIAL CLK
DMSS CLK
S TAPE H
BIAS CTL R
BIAS CTL L
INSERT H
S.PLAY
REC MUTE R
REC MUTE L
SLOW+STILL
NOR.A.MUTE
R REC
L REC
AD IN1/IN2
TO NOR.AD
S VHS SW
TO BCD
ISSB IN
ISSB OUT
ISSB CLK
EDIT IN
RF SW P
TD OUT
QCTL
ENV SW
RF SW P
H AMP SW
S.PLAY
TO VP
SSB CLK
SSB DATA
TO TM
VD ENV
SVHS DET
H.AMP.SW
ROTARY
VD REC
S-VHS SW
S.PLAY
PB H
REC H
PIC.CRE.
RF SWP
EXT SYNC ON
EXT1/EXT2
TO VD
VD P
Q VD
EXT-SYNC. TO OPTIONAL CTL UNIT (FRAME CTL)
HD (PB)
C-SYNC
HD (EE)
VD (EE)
REC ID
EXT1/EXT2
SPECIAL PLAY
VSS
N.C (H)
ML-D
ML-S
SW DATA 0
SW DATA 1
SW DATA 2
FL START SW
SAFETY SW
STILL+SLOW
VDD
R REC
L REC
FECNT
PG
ISSB IN
ISSB OUT
ISSB CLK
PB FP
ENV SW
EDIT IN
EE FP
C FG 1
H FG
PB CTL P
COMP SYNC
RF SW P
Q VD
VDP
REC CTL
DRUM PWM
CAP PWM
A VSS
A VREF
PG MM
VD ENV
HIFI LO
S VHS
DEW S.
T.REEL P
T TOP S.
T END S.
RESET
VDD
X2
X1
VSS
H.AMP.SW
ROTARY
VD REC
AF SW P
CTL G.DN
S-VHS
CAP F/R
QCTL
TD IN
TD OUT
BIAS CONTROL R
BIAS CONTROL L
AF REC
INSERT HIGH
POWER UP
DMSS CLK
PB HIGH
REC H
ODD/EVEN
EXT-SYNC IN
S.CLK
S.OUT
S.IN
A MUTE
A.CHIP SEL
A.SERIAL +DMSS DATA
A.SERIAL CLK
REC MUTE R
REC MUTE L
AD IN1 /IN2
NOR A.MUTE
BDS1-13907/HP40S-G2
L
K
J
I
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
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21
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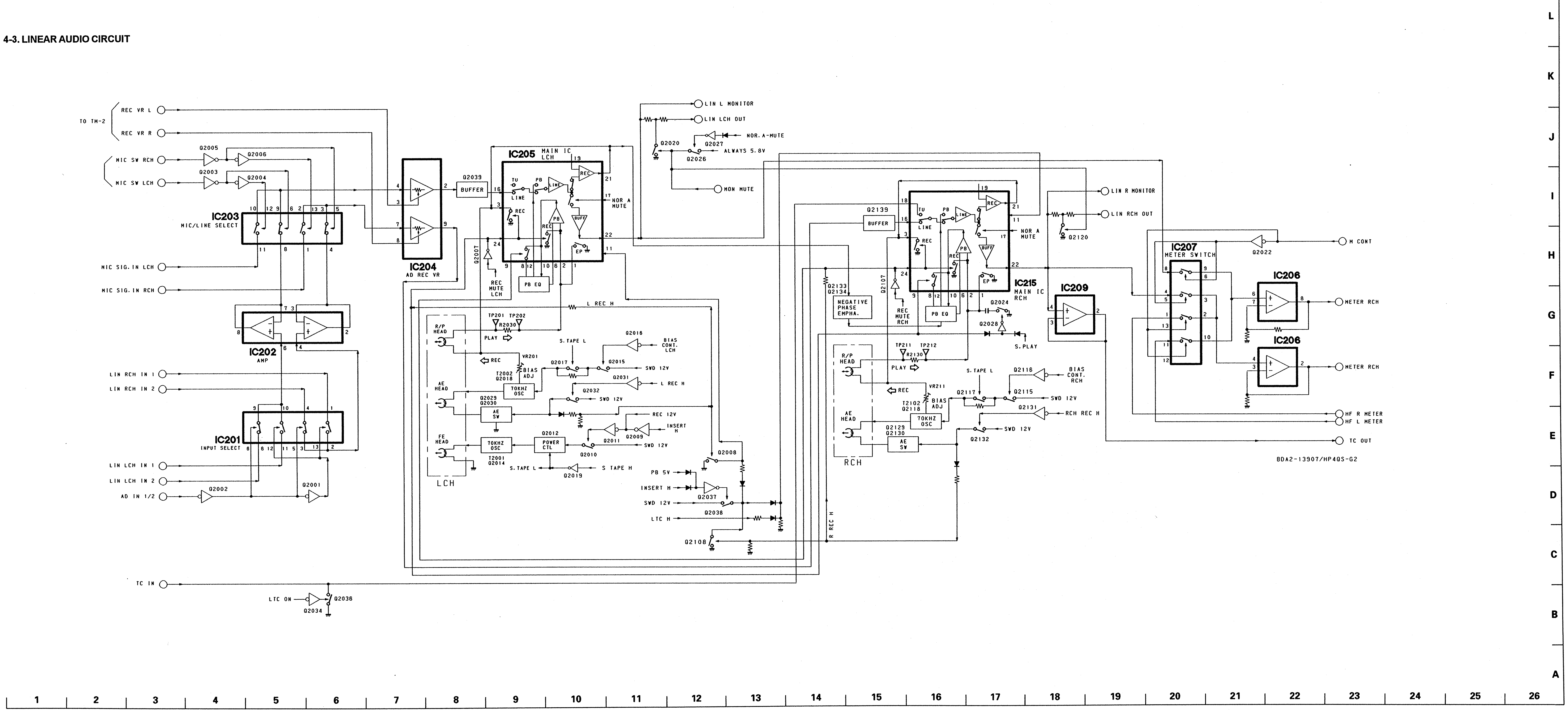
24
25
26

4-3. LINEAR AUDIO CIRCUIT


TO TM-2
REC VR L
REC VR R
MIC SW RCH
MIC SW LCH
Q2005
Q2006
Q2003
Q2004
IC203
MIC/LINE SELECT
MIC SIG. IN LCH
MIC SIG. IN RCH
IC202
AMP
LIN RCH IN 1
LIN RCH IN 2
IC201
INPUT SELECT
LIN LCH IN 1
LIN LCH IN 2
AD IN 1/2
Q2002
Q2001
TC IN
LTC ON
Q2034
Q2036
IC204
AD REC VR
Q2039
BUFFER
IC205
MAIN IC
LCH
TU
LINE
PB
REC
BUFF
EP
PB EQ
NOR A MUTE
Q2007
REC MUTE LCH
L REC H
R/P HEAD
AE HEAD
FE HEAD
TP201
TP202
R2030
PLAY
REC
VR201
BIAS ADJ
T2002
Q2018
70KHZ OSC
Q2029
Q2030
AE SW
T2001
Q2014
POWER CTL
Q2012
LCH
S. TAPE L
Q2017
Q2016
BIAS CONT. LCH
Q2015
SWD 12V
Q2031
L REC H
Q2032
REC 12V
INSERT H
Q2009
Q2011
Q2010
S TAPE H
Q2019
Q2008
PB 5V
INSERT H
Q2037
SWD 12V
Q2038
LTC H
Q2108
R REC H
LIN L MONITOR
LIN LCH OUT
NOR. A-MUTE
Q2020
Q2027
Q2026
ALWAYS 5.8V
MON MUTE
Q2139
BUFFER
Q2133
Q2134
NEGATIVE PHASE EMPHA.
Q2107
REC MUTE RCH
IC215
MAIN IC
RCH
Q2024
Q2028
S. PLAY
TP211
TP212
R2130
VR211
BIAS ADJ
T2102
Q2118
70KHZ OSC
Q2129
Q2130
AE SW
RCH
S. TAPE L
Q2116
BIAS CONT. RCH
Q2117
Q2115
SWD 12V
Q2131
RCH REC H
Q2132
LIN R MONITOR
LIN RCH OUT
Q2120
IC209
IC207
METER SWITCH
Q2022
M CONT
IC206
METER RCH
HF R METER
HF L METER
TC OUT
BDA2-13907/HP40S-G2
L
K
J
I
H
G
F
E
D
C
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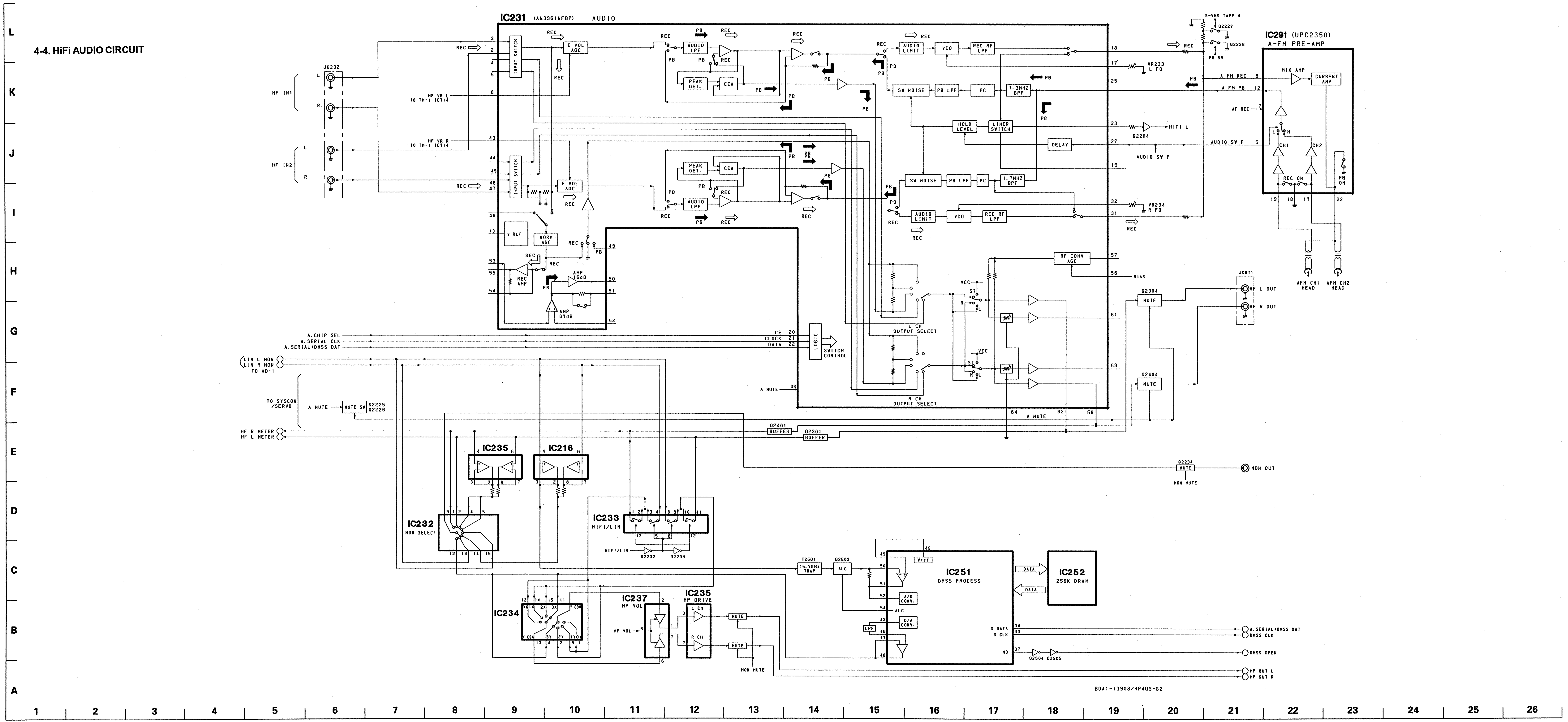
4-4. HiFi AUDIO CIRCUIT


IC231 (AN3961NFBP) AUDIO
INPUT SWITCH
E VOL AGC
AUDIO LPF
PEAK DET.
CCA
AUDIO LIMIT
VCO
REC RF LPF
SW NOISE
PB LPF
PC
1.3MHZ BPF
1.7MHZ BPF
HOLD LEVEL
LINER SWITCH
DELAY
V REF
NORM AGC
REC AMP
AMP 16dB
AMP 67dB
RF CONV AGC
L CH OUTPUT SELECT
R CH OUTPUT SELECT
LOGIC
SWITCH CONTROL
REC
PB
JK232
HF IN1
HF IN2
HF VR L TO TM-1 IC714
HF VR R TO TM-1 IC714
A.CHIP SEL
A.SERIAL CLK
A.SERIAL+DMSS DAT
CE
CLOCK
DATA
LIN L MON
LIN R MON
TO AD-1
TO SYSCON /SERVO
A MUTE
MUTE SW
Q2225
Q2226
HF R METER
HF L METER
Q2401 BUFFER
Q2301 BUFFER
S-VHS TAPE H
Q2227
Q2228
PB 5V
VR233 L FO
VR234 R FO
A FM REC
A FM PB
AF REC
AUDIO SW P
HIFI L
Q2204
BIAS
VCC
ST
IC291 (UPC2350) A-FM PRE-AMP
MIX AMP
CURRENT AMP
CH1
CH2
REC ON
PB ON
AFM CH1 HEAD
AFM CH2 HEAD
JK871
HF L OUT
HF R OUT
Q2304 MUTE
Q2404 MUTE
Q2234 MUTE
MON OUT
MON MUTE
IC235
IC216
IC232 MON SELECT
IC233 HIFI/LIN
HIFI/LIN
Q2232
Q2233
IC234
IC237 HP VOL
HP VOL
IC235 HP DRIVE
L CH
R CH
MUTE
MON MUTE
T2501 15.7KHz TRAP
Q2502 ALC
IC251 DMSS PROCESS
Vref
A/D CONV.
D/A CONV.
LPF
ALC
S DATA
S CLK
MB
IC252 256K DRAM
DATA
Q2504
Q2505
A.SERIAL+DMSS DAT
DMSS CLK
DMSS OPEN
HP OUT L
HP OUT R
BDA1-13908/HP40S-G2
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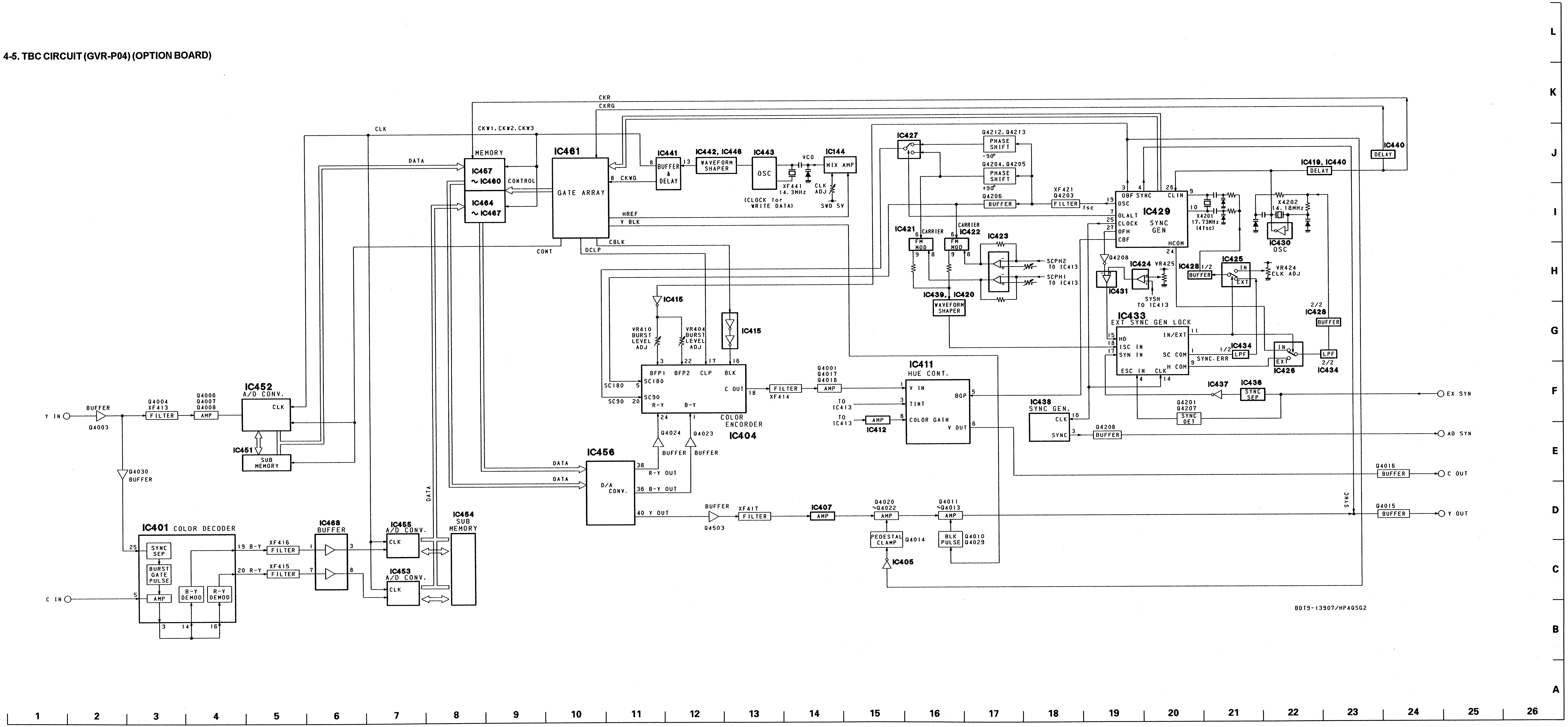
4-5. TBC CIRCUIT (GVR-P04) (OPTION BOARD)



CKR
CKRG
CLK
CKW1, CKW2, CKW3
DATA
MEMORY
IC457 ~ IC460
IC464 ~ IC467
CONTROL
IC461
GATE ARRAY
8 CKWG
HREF
Y BLK
CBLK
CONT
DCLP
IC441
BUFFER & DELAY
IC442, IC446
WAVEFORM SHAPER
IC443
OSC
XF441 14.3MHz
(CLOCK for WRITE DATA)
VCO
CLK ADJ
SWD 5V
IC144
MIX AMP
IC427
Q4212, Q4213
PHASE SHIFT
-90°
Q4204, Q4205
PHASE SHIFT
+90°
Q4206
BUFFER
XF421 Q4203
FILTER
fsc
IC429
OBF SYNC
CLIN
OSC
OLALT
CLOCK
OFH
CBF
SYNC GEN
HCOM
X4201 17.73MHz (4fsc)
X4202 14.18MHz
IC430
OSC
IC440
DELAY
IC419, IC440
DELAY
IC421
CARRIER
FM MOD
IC422
CARRIER
FM MOD
IC423
SCPH2 TO IC413
SCPH1 TO IC413
IC439, IC420
WAVEFORM SHAPER
Q4208
IC424
VR425
IC431
SYSH TO IC413
IC428 1/2
BUFFER
IC425
IN
EXT
VR424 CLK ADJ
2/2 IC428
BUFFER
IC433
EXT SYNC GEN LOCK
HD
ISC IN
SYN IN
IN/EXT
SC COM
H COM
ESC IN
CLK
1/2 IC434
LPF
SYNC. ERR
IC426
2/2 IC434
LPF
IC437
IC436
SYNC SEP
Q4201 Q4207
SYNC DET
IC438
SYNC GEN.
CLK
SYNC
Q4208
BUFFER
EX SYN
AD SYN
IC415
VR410 BURST LEVEL ADJ
VR404 BURST LEVEL ADJ
BFP1
BFP2
CLP
BLK
SC180
SC90
R-Y
B-Y
C OUT
COLOR ENCORDER
IC404
Q4024
Q4023
BUFFER
FILTER
XF414
Q4001 Q4017 Q4018
AMP
IC411
HUE CONT.
V IN
TINT
COLOR GAIN
BGP
V OUT
TO IC413
AMP
IC412
Y IN
BUFFER
Q4003
Q4004 XF413
FILTER
Q4006 Q4007 Q4008
AMP
IC452
A/D CONV.
CLK
IC451
SUB MEMORY
Q4030
BUFFER
IC456
D/A CONV.
R-Y OUT
B-Y OUT
Y OUT
BUFFER
Q4503
XF417
FILTER
IC407
AMP
Q4020 ~Q4022
AMP
PEDESTAL CLAMP
Q4014
IC405
Q4011 ~Q4013
AMP
BLK PULSE
Q4010 Q4029
SYNC
Q4016
BUFFER
C OUT
Q4015
BUFFER
Y OUT
IC401 COLOR DECODER
SYNC SEP
BURST GATE PULSE
AMP
B-Y DEMOD
R-Y DEMOD
C IN
XF416
FILTER
XF415
FILTER
IC468
BUFFER
IC455
A/D CONV.
IC453
A/D CONV.
IC454
SUB MEMORY
BDT9-13907/HP40SG2
L
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5. MECHANISM MAINTENANCE AND CHECKING

5-1. PERIODIC CHECKING AND MAINTENANCE ITEMS AND SERVICE JIGS

5-1-1. PERIODIC CHECK ITEMS

1. Checking the Using Time of Upper Cylinder Assembly (Upper Drum)

While the PLAY button is being pressed continously during PLAY, the total time of use of the upper assembly cylinder will be displayed in hours on the tape counter display. (E.g.: 0 10 00H) Use this time as a reference for replacing the cylinder.
Reset the counter when the upper assembly cylinder or compl cylinder has been replaced. To reset the time. press the TIME CODE RESET button and JOG/SHUTTLE button together for more than two seconds. It will be displayed as "0 00 00H" after resetting.

2. Mechanism Maintenance and Checking for General Use (Editing)

The following maintenance and periodic checking procedures are recommended to ensure proper operation, and to protect the tape from dirt and damage. Also these procedures should always be followed after repairing the unit.

Periodic Check Items

○ Cleaning ◎ Confirmation △ Lubrication □ Exchange (The periods will vary widely according to environmental and usage conditions.)

	Part / Usage Time (hours)	500H	1000H	1500H	2000H	2500H	3000H	3500H	4000H	4500H	5000H
Tape Path System	ASSY, HOLDER, BAND		◎		□		◎		□		◎
	COMPL, CYLINDER, 5H7N-SOB	○	○	○	○	○	○	○	○	○	○
	ASSY, CYLINDER, UPR, 5H7N-SO	○	◎(□)	◎(□)	◎(□)	◎(□)	◎(□)	◎(□)	◎(□)	◎(□)	◎(□)
	SPECIAL WASHER	○	○	○	○	○	○	○	○	○	○
	TAPE GUIDE	○	○	○	○	○	○	○	○	○	○
	COMPL, MOUNTING HEAD	○	○	○	○	○	□	○	○	○	○
	ASSY, LEVER, REV GUIDE	○	○	○	○	○	○	○	○	○	○
	COMPLE, PINCH ROLLER	○	○	○	□	○	○	○	□	○	○
	ASSY, GUIDE, ROLLER	○	○	○	○	○	○	○	○	○	○
	HEAD, FULL ERASE	○	○	○	○	○	□	○	○	○	○
	ROLLER, IMPEDANCE				○△				○△		
	ASSY, ROLLER, CLEANER		◎		◎		□		◎		◎
	ASSY, EARTH, CYL.						□				
Reel Drive System	ASSY, REEL, SUPPLY		○		○△		○		○△		○
	ASSY, REEL, TAKE UP		○		○△		○		○△		○
	ASSY, GEAR, ONEWAY		○		○△		○		○△		○
	GEAR, REEL, TAKE UP		○		○△		○		○△		○
	COMPLE, IDLER, CLUTCH				△				△		
	ASSY, IDLER		◎		◎		□		◎		◎
	PULLY, REEL				△				△		
	MOTOR, CAPSTAN	○	○	○	○	○	○	○	○	○	□
	BELT, REEL DRIVE				□				□		
	ASSY, GEAR, FRICTION		◎		△□		◎		△□		◎
Brake	ASSY, BRAKE SUB T		◎		◎		◎□		◎		◎
	ASSY, BRAKE, SUPPLY		◎		□		◎		□		◎
	ASSY, BRAKE, TAKE UP		◎		□		◎		□		◎
	ASSY, BRAKE, CAPSTAN		◎		□		◎		□		◎
Loading Drive System	HOLDER, WORM				△				△		
	ASSY, LOADING MOTOR						□				
	BELT, LOADING				□				□		
	GEAR, HELICAL				△				△		
	CAM, MODE				△				△		
	CAM, MAIN				△				△		
	ASSY SLIDE, M PLATE	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎
Performance check	FF, REW, REV, PLAY MODE TORQUE		◎		◎		◎		◎		◎
	PLAY MODE BACK TENSION TORQUE		◎		◎		◎		◎		◎

NOTE: The back tension torque is the value that has been measured by the cassette torque meter (VHJ-0016). The torque of FF, REV, REW, and PLAY represent those measured with them locked by the torque gauge. FF and REW are values 2 seconds after starting.

Torque value:

FWD	: 600 gcm or more
REW	: 600 gcm or more
PLAY (2H)	: 100 to 160 gcm
REV	: 210 to 280 gcm
Back tension	: 52 ± 13 gcm

3. Mechanism Maintenance and Checking for Animation

Animation usage requires special maintenance procedures due to the number of edits made during animation. We suggest you follow this schedule closely.

○ Cleaning ◎ Confirmation □ Exchange (The periods will vary widely according to environmental and usage conditions.)

	Parts / Edits and/or Animation Cycles	25000	50000	75000	100000	125000	150000	175000	200000
Back Tension Control Parts	ASSY, SLIDE, MAIN PLATE		◎(□)	□		◎(□)	□		◎(□)
	ASSY, LEVER, CONTROL		◎(□)	□		◎(□)	□		◎(□)
	LEVER, RETURN TENSION		◎(□)	□		◎(□)	□		◎(□)
Tape Path Parts	CYLINDER	○	○	○	○	○	○	○	○
	COMPL, MOUNTING HEAD	○	○	○	○	○	○	○	○
	COMPL, PINCH ROLLER	○	○	○	○	○	○	○	○
	HEAD, FULL ERASE	○	○	○	○	○	○	○	○
	TAPE GUIDE	○	○	○	○	○	○	○	○
	ROLLER, IMPEDANCE	○	○	○	○	○	○	○	○
Consumable Parts	BELT, LOADING			◎(□)			□		
	BELT, REEL DRIVE			◎(□)			□		
	ASSY, BRAKE, SUPPLY			◎(□)			□		
	ASSY, BRAKE, TAKE UP			◎(□)			□		
	ASSY, GEAR FRICTION			◎(□)			□		
	ASSY, HOLDER BAND			◎(□)			□		
	PULLEY, REEL			◎(□)			□		

Animation is a special function that requires multiple repeat edits. The process is more demanding on the tape transport than standard VCR operations.

SPECIAL NOTES RELATING TO ANIMATION USAGE:

1. Avoid the use of thin based tape such as tapes longer than T-120.
2. Prior to use, pack the tape by running the VCR in the fast forward and rewind modes.
3. Start your animation about 5 minutes into the tape. Avoid animation near the clear leader area.
4. Avoid re-using tapes which have already been used for animations. After a section of tape has been used for animation, do not re-animate over the same area. If you have completely used up a tape for animating, do not use it for animation recording again, and only for limited playback.
   To protect your recordings, make a backup copy.
5. As a result of tape wear metal particles may adhere to various parts of the transport, including magnetic heads. If the horizontal noies occurs due to such metal particles, remove the tape from the VCR and completely clean the transport. Do not reuse the tape.
6. Follow the maintenance schedule closely.
   Change all parts when required.

5-1-2. CLEANING

1. Drum (COMPL CYLINDER) and Video Heads (See Fig. 5-1-1.)

1) Wrap a chamois around your finger and moisten it with methyl alcohol.
2) Move the chamois to the left and right several times on the video head to clean it. There is also a video head on the opposite side, so clean it likewise. In Hi-Fi models, clean the audio head also.
3) Clean the tape path surface of the cylinder in the same way.

Note: Always turn off power before cleaning. Never move the chamois vertically or apply too much force to the head; it may be damaged.

2. Tape Guide System (See Fig. 5-1-2.)

Set to the EJECT mode and clean the tape guide system (tape guides, impedance rollers, FTE head, ACE head, pinch rollers, capstan axles, etc.) with a chamois moistened with methyl alcohol.

Note: Be sure that no oil, grease, etc., adhere to the chamois and that heads are not damaged.

3. Cleaning of the Drive System

Clean the drive system (loading belt, reel drive belt, pulley, supply reel table, etc.) with a soft cloth moistened with methyl alcohol.

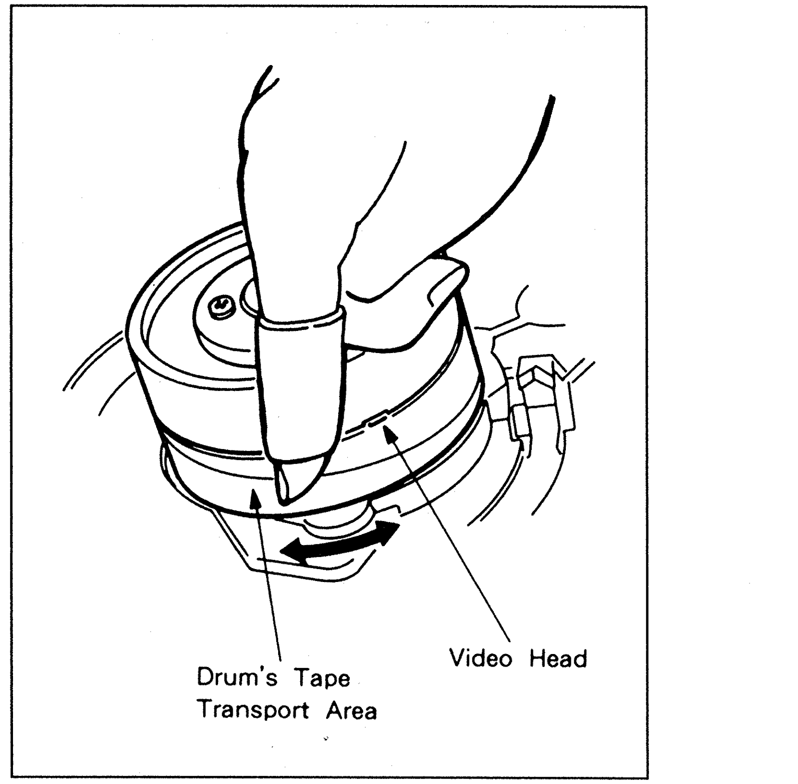


Fig. 5-1-1

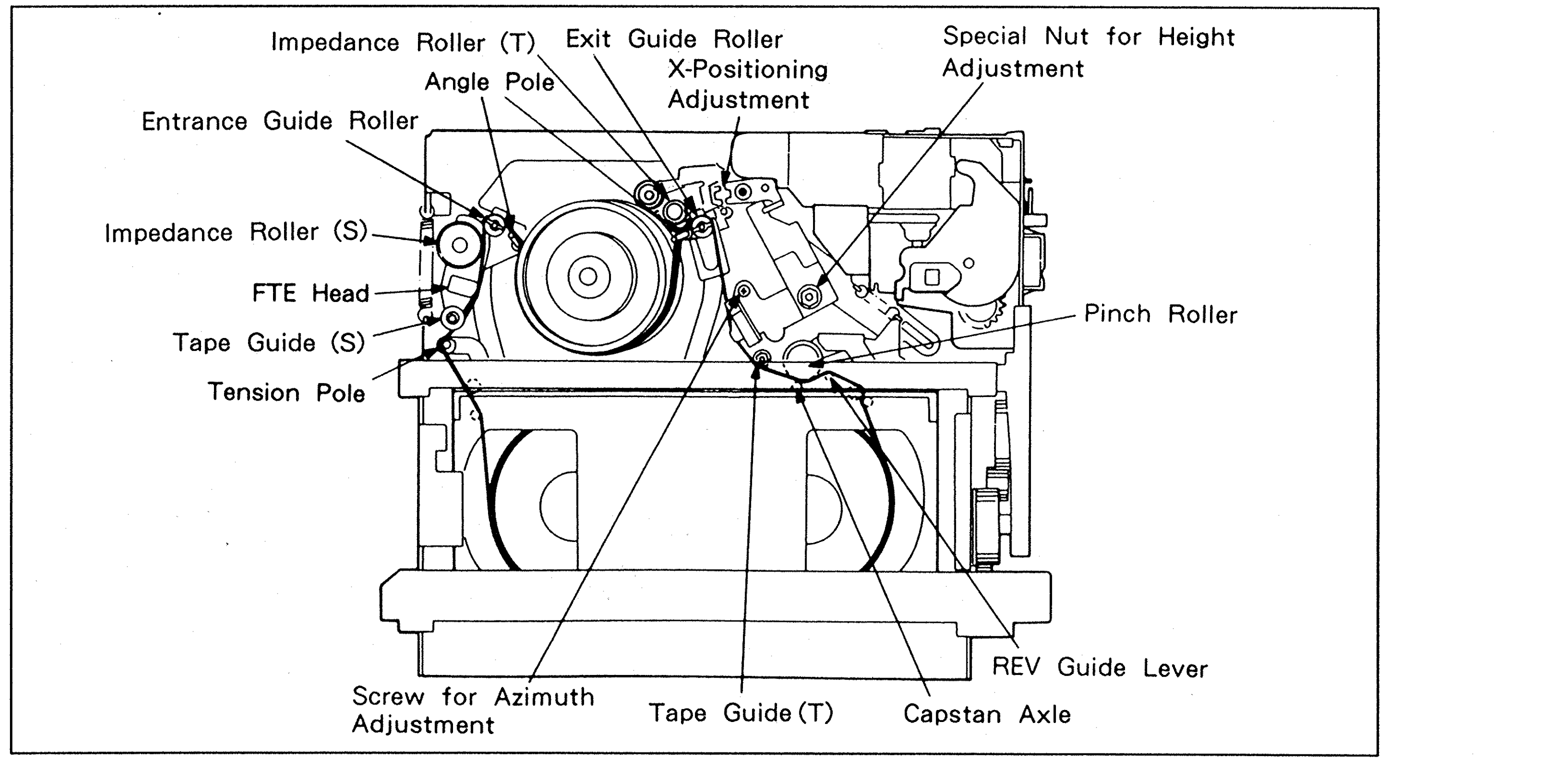
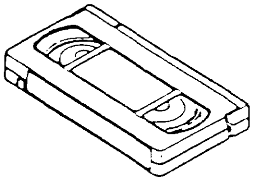
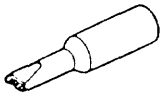
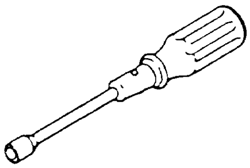
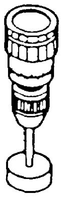
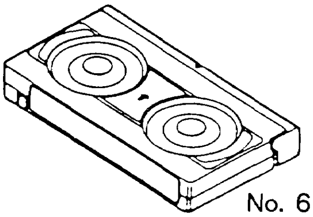
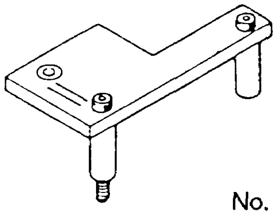
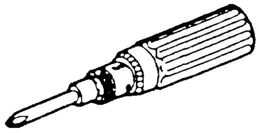
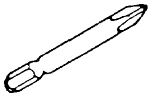
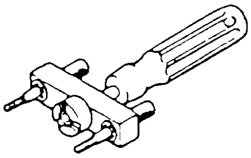
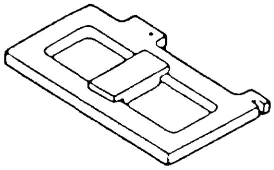
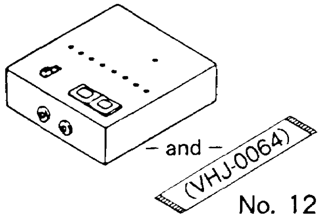
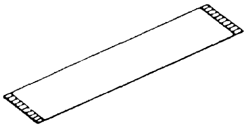
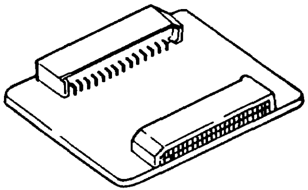
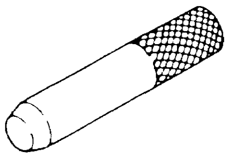


Fig. 5-1-2. Cleaning

5-1-3. Service Jigs

No.	Jig	Jig No.	Remarks
1	Alignment tape	VHJ-0008	SP color bar, 1kHz (normal)
2	Alignment tape	VHJ-0009	SP monoscope, 7kHz (normal)
3	Eccentric screwdriver	VHJ-0003	For tape path adjustment
4	Nut box	VHJ-0048	For tape guide removal
5	Torque gauge	VHJ-0004	For reel take-up torque measurement
6	Cassette torquemeter	VHJ-0016	For back tension torque measurement
7	Position adjustment gauge	VHJ-0072	For position adjustment
8	Torque gauge screwdriver	VHJ-0014	For screw fastening torque adjustment
9	3mm dia. bit for torque screwdriver	VHJ-0045	Spare bit for the torque gauge screwdriver
10	Video head removing tool	VHJ-0041	For upper drum removal
11	Cassette stand plate gauge	VHJ-0001	For reel height adjustment
12	Mode selector and 26-pin flexible flat cable (VHJ-0064)	VHJ-0050	For mechanism mode selection and for connecting mode selector
13	26-pin flexible flat cable	VHJ-0064	For mode selector (VHJ-0050) connection
14	Mode selector relay board	VHJ-0075	Relay board for mode selector
15	REV guide lever removing tool	VHJ-0073	For REV guide lever removal

VHJ-0008, VHJ-0009  No. 1, 2	VHJ-0003  No. 3	VHJ-0048  No. 4	VHJ-0004  No. 5
VHJ-0016  No. 6	VHJ-0072  No. 7	VHJ-0014  No. 8	VHJ-0045  No. 9
VHJ-0041  No. 10	VHJ-0001  No. 11	VHJ-0050  No. 12	VHJ-0064  No. 13
VHJ-0075  No. 14	VHJ-0073  No. 15		

5-2. MODE SELECTOR (VHJ-0050) HANDLING INSTRUCTIONS

The mode selector drives the loading motor of the P90 mechanism with its internal batteries (UM-2 × 4 = 6V), using LEDS to indicate the mode (EJECT, INITIAL, BRAKE, STOP/REW/FWD, STILL, PLAY, IDLER, REV) simultaneously with EJECT⇔REV mode changes.
Instead of the internal batteries, an external DC 6V power supply can also be used.

Note: The mechanism mode display is different from the P88 and P89 mechanisms. When using for GVR-S960, refer to Table. 5-2-1 and change the displays as follows.
STILL→PLAY
PLAY→STILL
IDLER→R. SLOW

5-2-1. PART NAMES (See Fig. 5-2-1.)

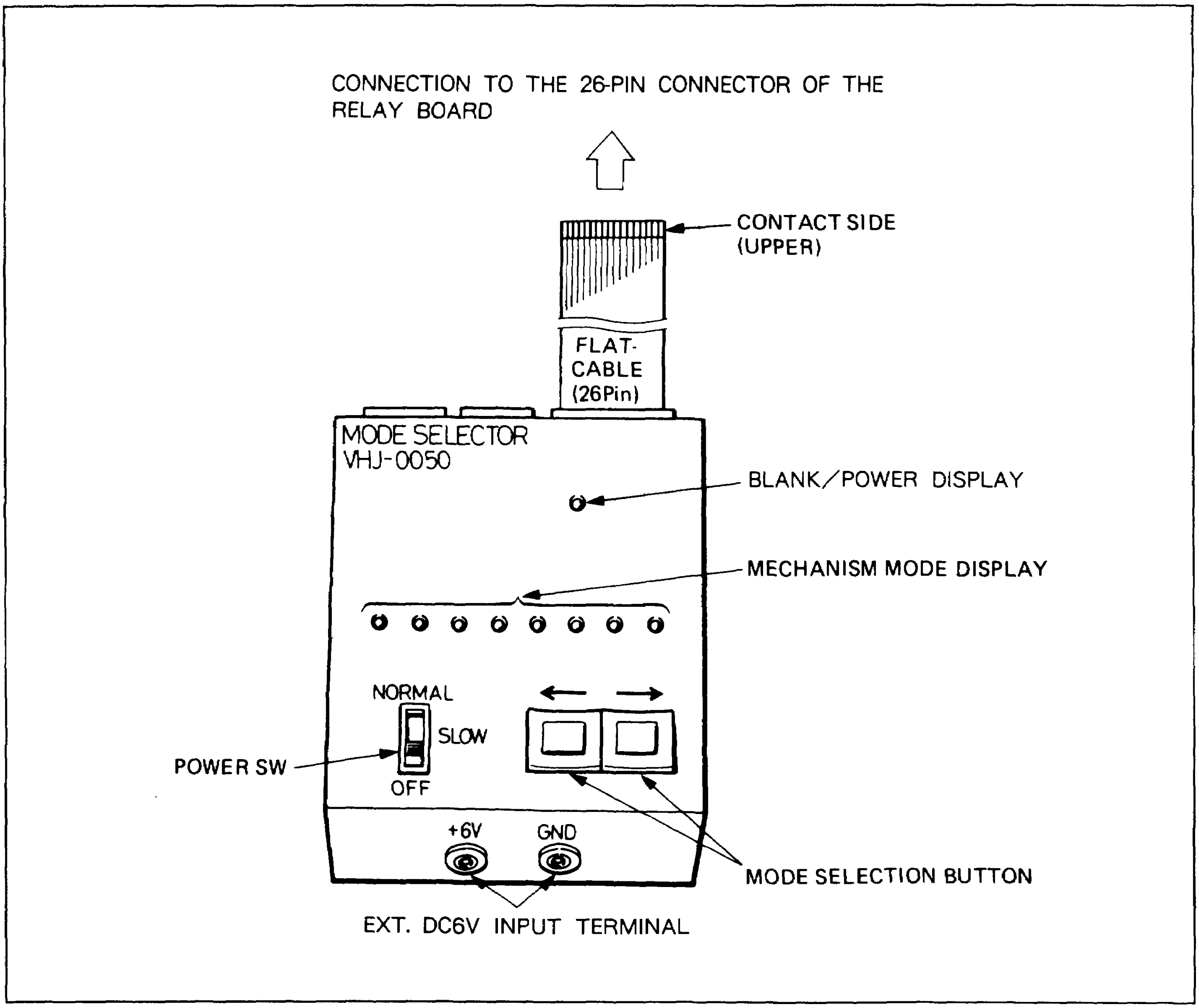

CONNECTION TO THE 26-PIN CONNECTOR OF THE RELAY BOARD
CONTACT SIDE (UPPER)
FLAT-CABLE (26Pin)
MODE SELECTOR VHJ-0050
BLANK/POWER DISPLAY
MECHANISM MODE DISPLAY
NORMAL
SLOW
OFF
POWER SW
+6V
GND
MODE SELECTION BUTTON
EXT. DC6V INPUT TERMINAL

Fig. 5-2-1.

Mode Selector Display	EJECT	INITIAL	BRAKE	STOP (FF/REW)	STILL	PLAY	IDLER	REV
GVR-S950 Mechanism Mode	EJECT	INITIAL	BRAKE	STOP (FF/REW)	PLAY	STILL	R・SLOW	REV

Table. 5-2-1. Mechanism Mode Display (LED) Mode Name

5-2-2. CONNECTION METHOD (See Fig. 5-2-2)

1) Remove the 7-wire cable connected from the system control circuit to the connector (CN822) of the MC-3 board.
2) Connect the 7-wire cable (VHJ-0076) between the connector (CN822) of the MC-3 board and the 7-pin connector of the Mode Selector Connection Board service jig (VHJ-0075).
3) Remove the 6-wire cable extending from the cassette holder section from the connector of the System Control Circuit Board and connect it to the 6-pin connector of the Mode Selector Connection Board service jig (VHJ-0075).
4) Connect a supplied 26-pin flat cable service jig (VHJ-0064) of the mode selector (VHJ-0050) between the mode selector and the 26-pin connector of the Connection Board service jig (VHJ-0075).

Note: Care should be taken to avoid mistaking the direction of the contacting side when connecting a flexible flat cable.

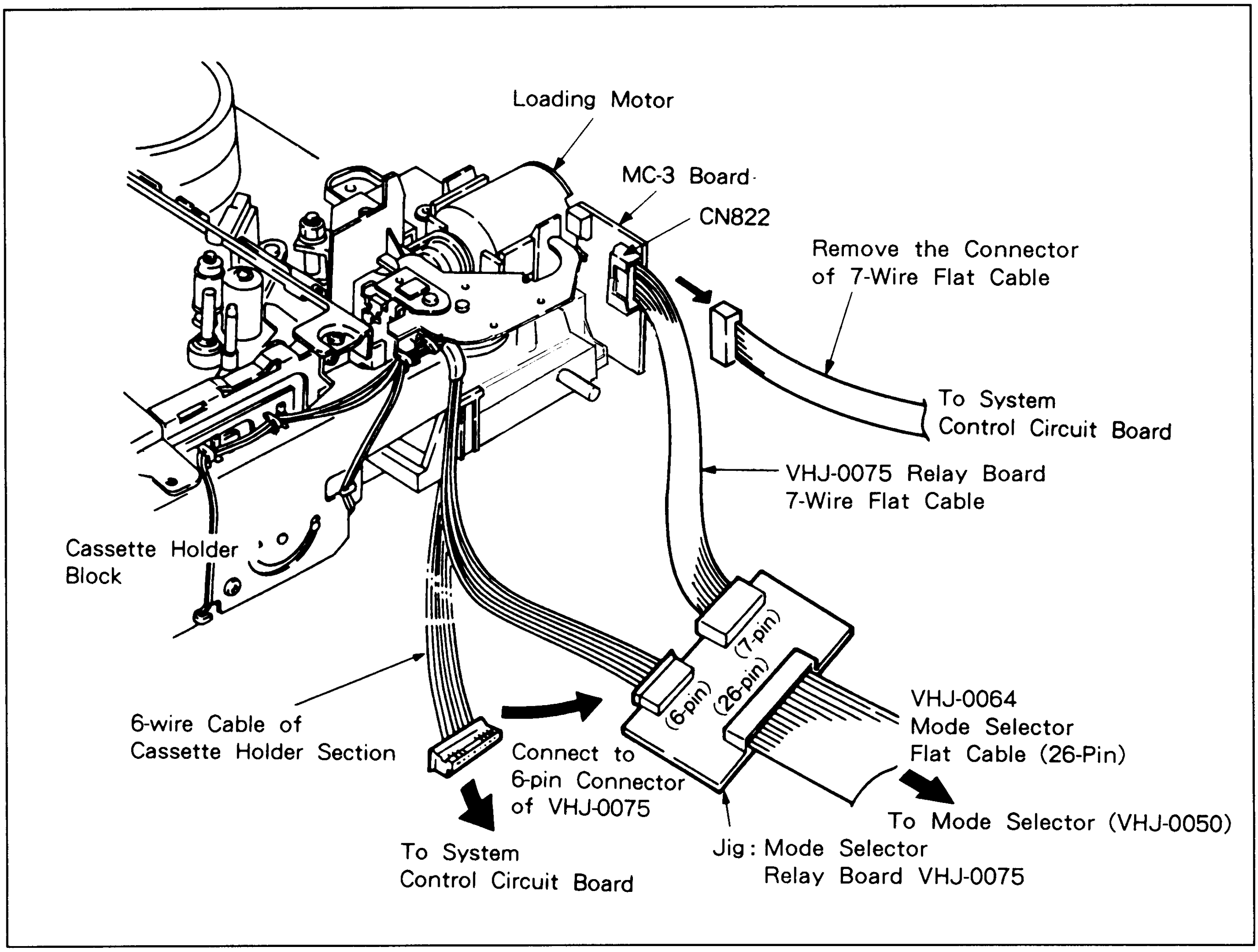

Loading Motor
MC-3 Board
CN822
Remove the Connector of 7-Wire Flat Cable
To System Control Circuit Board
VHJ-0075 Relay Board 7-Wire Flat Cable
Cassette Holder Block
(7-pin)
(26-pin)
(6-pin)
VHJ-0064 Mode Selector Flat Cable (26-Pin)
6-wire Cable of Cassette Holder Section
Connect to 6-pin Connector of VHJ-0075
To System Control Circuit Board
Jig: Mode Selector Relay Board VHJ-0075
To Mode Selector (VHJ-0050)

Fig. 5-2-2. Connection

5-2-3. HANDLING METHOD

1) When the right side (⇨) of the mode selector button is pressed, the mode changes in this sequence : EJECT, INITIAL, BRAKE, STOP／REW／FF, STILL, PLAY, IDLER, REV.
2) To change the mode from REV to EJECT, press the left side (⇨) of the mode selector button to select the desired mode.
3) In the mid position of each mode during a shift to another mode, the BLANK LED lights. But the PLAY, IDLER, REV LEDs light between the EJECT mode and the INITIAL mode. Be sure, therefore, to check the mechanism body to see just what state the mechanism is in.
   Incidentally, if the mode selector is not connected to the mechanism, the BLANK LED lights to indicate the power is ON.
4) The SLOW position of the POWER switch makes relatively slow motions in comparison with the NORMAL position.

Note 1: The mode selector drives the loading motor only, not affecting the head drum motor and the capstan motor. When using the mode selector with a cassette loaded, turn the capstan motor manually to remove tape slack, preventing tape entanglement.

Note 2: If the left side (⇦) of the mode selector (VHJ-0050) key is pressed and held with the COMPL cassette mechanism removed, it might get past the EJECT position, causing the front helical gear and the front worm gear to get disengaged.

In this condition, since the front helical gear will not turn even if the right side (⇨) of the mode selector key is pressed, rotate (push) the front helical gear clockwise by hand and engage it with the front worm gear. Because there is a misalignment between the mechanism main body operation mode (indicated by the mode selector indicator lamps) and the front loading mechanism operation mode, press and hold the right side (⇨) of the mode selector key until the front helical gear and the front loading gear of the front loading mechanism get back to the initial condition. (Refer to A and B in Fig. 2-3-2 of Section 2-3-2, "Loading Motor.")
When the front loading mechanism returns to the initial condition, the operation mode of the whole mechanism returns to normal, matching the mode shown by the mode indicator lamps (EJECT mode would not be properly indicated during eject).
Sometimes, engagement of the front helical gear with the front worm gear is delayed. The mechanism main body gets too much ahead and the front loading mechanism mode cannot be switched to the initial condition. In that case, press the left side (⇦) of the mode selector key, setting the mechanism main body operation mode back to EJECT (rotation of the mode cam and the MAIN CAM stops).

Note 3: The mode indicator lamps show the mechanism operation mode, but the EJECT lamp may sometimes fail to indicate the actual mechanism operation mode.

When setting the mechanism to the EJECT or INITIAL mode for dismounting or reassembling, fine adjustment of each gear and cam, etc., and marking positions is required after the mode indicator lamp has lighted up. Do this with the mode selector switch in the SLOW position.

6. MECHANISM ADJUSTMENT

6-1. OPERATING THE MECHANISM WITH NO CASSETTE INSERTED (See Fig. 6-1-1.)

1) Attach black vinyl tape to the T-END and T-TOP sensors to prevent light from entering.
2) Push the TRAY LOCK LEVER in the direction shown by the arrow to maintain the unlocked condition. Release the lever just before the TRAY starts moving down.
3) In this condition, operation is possible in every mode. However, the following procedures are necessary to operate the unit in the REC, REW, and R-SEARCH modes.

REC mode: Push the SAFETY switch LEVER to turn on the SAFETY SWITCH (erasure prevention switch), then press the REC button. If the SAFETY SWITCH is not turned ON, the unit will enter the EJECT mode.

REW/R-SEARCH: After pressing the REW button, turn the TAKE-UP REEL ASS'Y by hand. Otherwise, the reel sensor will operate, entering the INITIAL mode after 2 to 3 seconds.

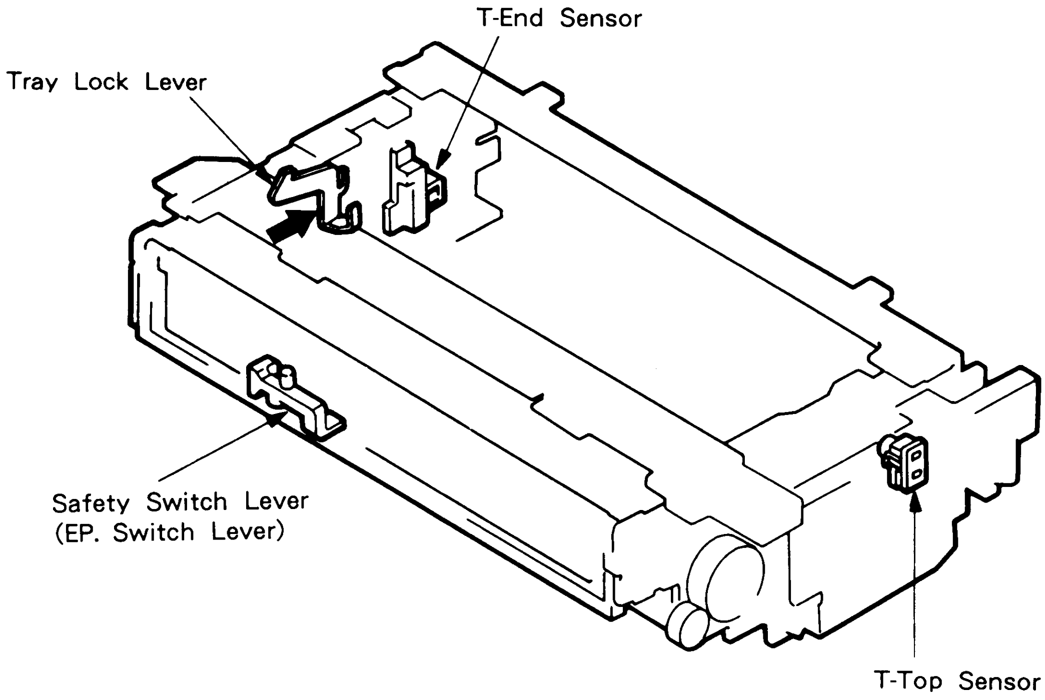


Fig. 6-1-1. Preparations for Adjustment

6-2. REEL TABLE HEIGHT ADJUSTMENT AND TORQUE CHECK

6-2-1. REEL TABLE HEIGHT (See Fig. 6-2-1.)

If the SUPPLY REEL ASS'Y or the TAKE-UP REEL ASS'Y is replaced, it will be necessary to adjust the REEL TABLE height.

(1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
(2) Attach the cassette stand plate gauge (VHJ-0001) and slide the gauge in the direction shown by the arrows.
(3) Confirm that, when the gauge stops, the REEL TABLEs are not in contact with surface A of the plate but are in contact with surface B.
(4) If the REEL TABLE is in contact with surface A, remove a spacer and check again.
(5) If the REEL TABLE is not in contact with surface B, add a spacer and check again.
(6) Remove the cassette stand plate gauge.
(7) Set to the EJECT mode with the mode selector.
(8) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.

Notes:

- Adjust the reel table height by adding or removing spacers (0.13t, 0.25t, 0.3t, 0.4t, and 0.5t) as appropriate so that the height meets the specifications. Use the same method for both the TAKE-UP REEL TABLE and the SUPPLY REEL TABLE.
  (The 0.5t washer is included as the standard washer for the SUPPLY REEL ASS'Y. The 0.4t washer is included as the standard washer for the TAKE-UP REEL ASS'Y.)
- If the height of the reel table is not within the specified value, the tape edge might be damaged as a result, or the tape path adjustment might not be possible to make.

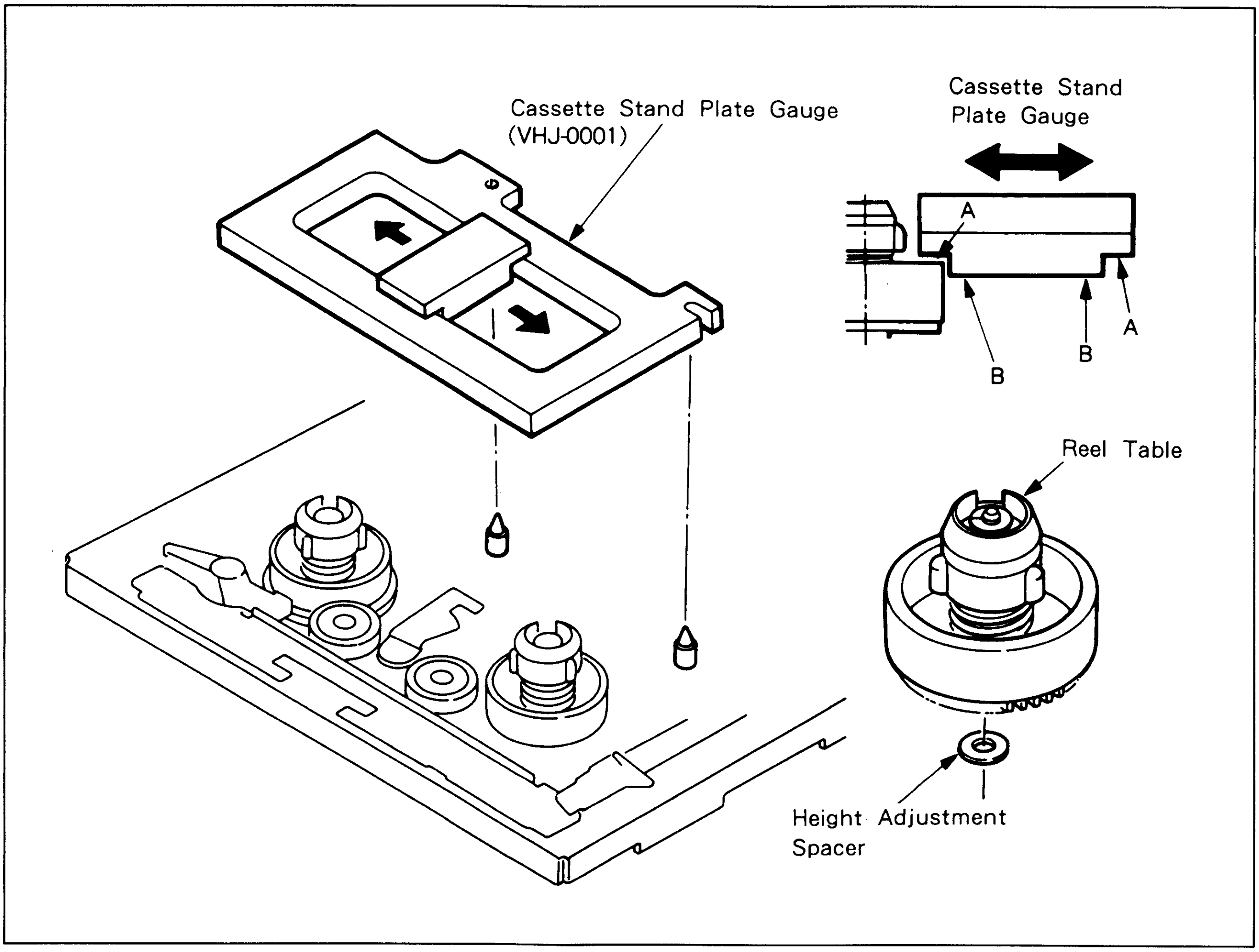


Fig. 6-2-1. Reel Table Height Adjustment

6-2-2. TORQUE CHECK (See Fig. 6-2-2.)

1) Set the unit to the operating condition without a cassette inserted as instructed in Section 6-1.
2) Measure the SUPPLY REEL TABLE torque in the REW mode, and confirm that it is 600 g-cm or more. Do this measurement keeping the torque gauge in a fixed position with your hand (locked torque).
3) Measure the TAKE-UP REEL TABLE torque in the F.FWD mode, and confirm that it is 600 g-cm or more (locked torque).
4) Measure the TAKE-UP REEL TABLE torque in the playback mode (SP tape speed), and confirm that it is within 100 through 160 g-cm (locked torque).
5) Measure the SUPPLY REEL TABLE torque in the REV (R-SEARCH) mode, and confirm that it is within 210 through 280 g-cm (locked torque).
6) After confirming that torque readings are within the specifications for each mode, check the following:
   ⓐ Dirt on the capstan motor and the REEL PULLEY groove.
   ⓑ Deterioration of the REEL DRIVE BELT.
   ⓒ Deterioration of the FRICTION GEAR ASS'Y felt (torque during playback).
   ⓓ Wear and damage of the COMPL CLUTCH MECHANISM and the reel drive system gears.

Notes: 1. Replace items ⓑ, ⓒ, and ⓓ if defective.
2. The measured value of torque during FF and REW represents the value 2 seconds after starting.

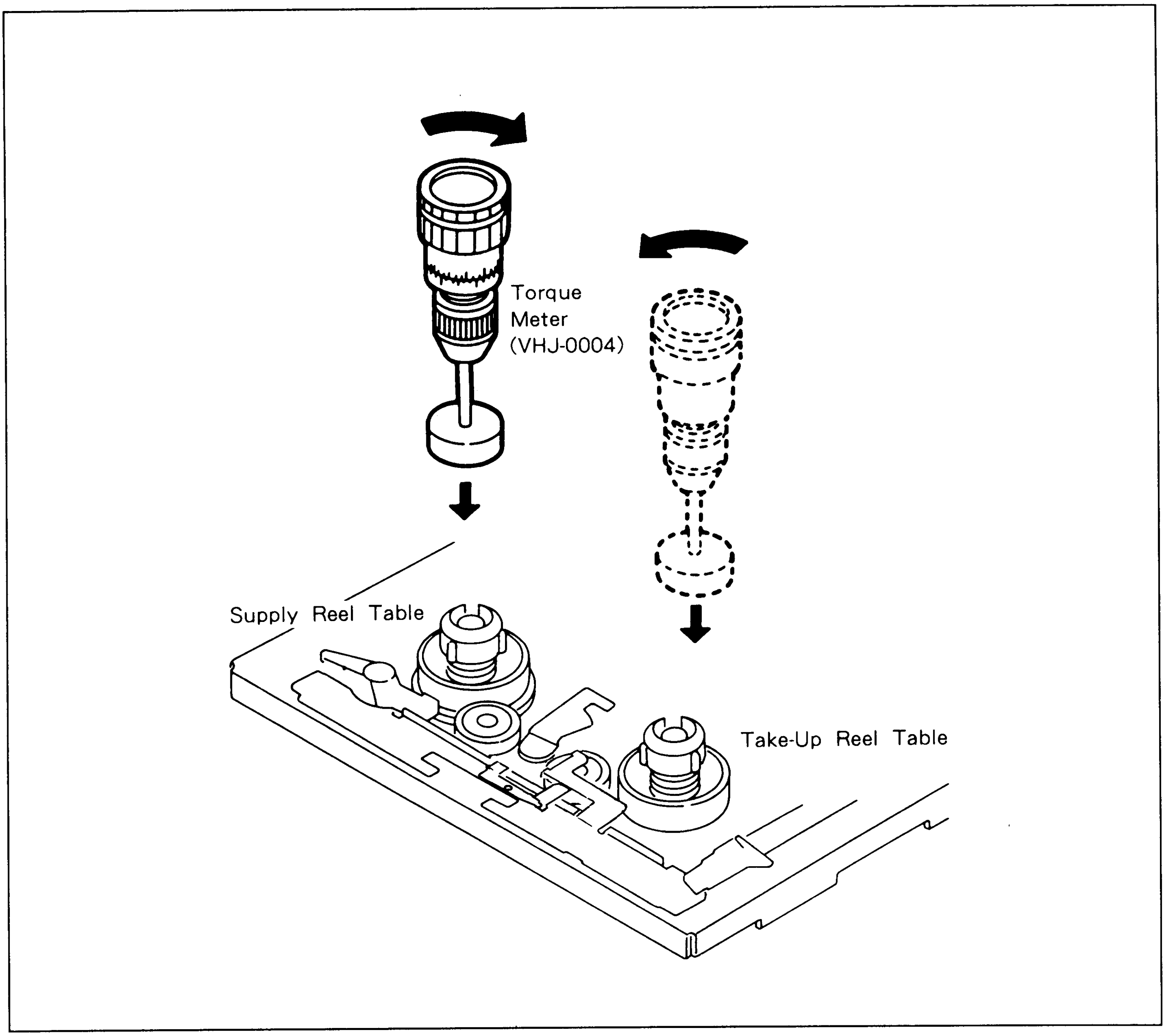


Fig. 6-2-2. Checking REW/FF/PLAY Torque

6-3. TENSION POLE (BACK TENSION GUIDE) POSITION ADJUSTMENT AND BACK TENSION TORQUE CHECK

6-3-1. TENSION POLE (BACK TENSION GUIDE) POSITION ADJUSTMENT
(See Fig. 6-3-1.)

1) Remove the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
2) Set to the PLAY mode with the mode selector (VHJ-0050).
3) Attach the position adjustment gauge (VHJ-0072) ①.
4) With the BRAKE BAND LEVER ASS'Y ⑤ rotated in the counterclockwise direction until it touches the OUTSERTER (white resin) ⑨ on the chassis, check that the TENSION POLE ② is between two marking lines of the position adjustment gauge.
5) If it is not, with the BRAKE BAND LEVER ASS'Y ⑤ rotated in the counterclockwise direction until it touches the OUTSERTER (white resin) ⑨ on the chassis, loosen the screw ④ slightly, change the position for attaching the BAND HOLDER ASS'Y ⑦ in the direction shown by arrow Ⓐ and adjust so that the tension pole comes between two marking lines.
6) Remove the position adjustment gauge ①.
7) Set the EJECT mode with the mode selector.
8) Mount the COMPL CASSETTE MECHANISM as instructed in Section 2-2-1.
9) Confirm that back tension torque is within 52 ± 13 g-cm, as instructed in Section 6-3-2.

6-3-2. BACK TENSION TORQUE CHECK
(See Fig. 6-3-1.)

1) Attach the cassette torquemeter (VHJ-0016) and set to the PLAY mode.
2) Confirm that back tension torque is within 52 ± 13 g-cm.
3) In case back tension torque does not meet the above specification, proceed as follows:
   ⓐ Clean the portion where the brake band (BAND HOLDER ASS'Y) ⑦ of the SUPPLY REEL ASS'Y ⑥ makes contact.
   ⓑ Confirm that the brake band of the BAND HOLDER ASS'Y ⑦ is not worn and that it is clean. If wear or dirt is found, replace the BAND HOLDER ASS'Y ⑦ as instructed in Section 2-7-3.
   ⓒ Replace the TENSION LEVER ASS'Y SPRING COIL ⑧.
4) Do the tension pole position adjustment after completing ⓐ, ⓑ, and ⓒ.

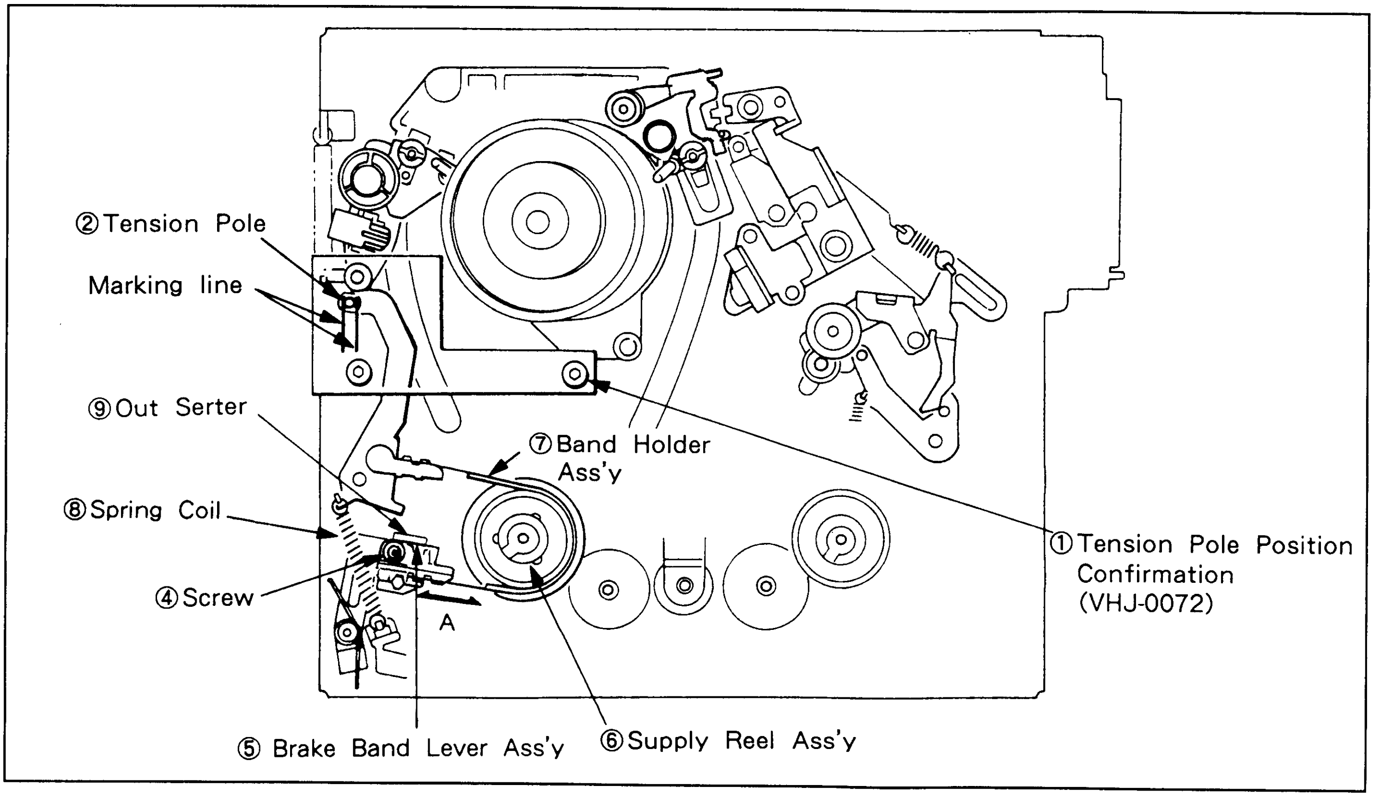


Fig. 6-3-1. Tension Pole Positioning Adjustment

6-4. TAPE PATH ADJUSTMENT

The tape path mechanism is precisely adjusted at the factory. Normally no readjustment is required, but checking and/or adjustment is necessary when parts of the tape path mechanism among those shown in the figure below (Fig. 6-4-1) have been removed or replaced after a long period of use.
This operation consists of adjusting the various guides so that the tape drawn out from the supply reel runs smoothly along the DRUM (CYLINDER) lead surface. A way of grasping the tape path condition by electronic means is monitoring the video head output envelope waveform with an oscilloscope. However, the fact that visual observation is essential in order to know whether the tape is running through the various guides in a smooth and natural way should be kept in mind when checking and adjusting.
Also remember that the position of the tape guides is not greatly affected by the replacement of the UPPER DRUM (UPPER CYLINDER) or the COMPL DRUM (COMPL CYLINDER), provided that it is correctly done, and that only the replaced parts should be adjusted after replacing a tape guide or COMPL HEAD BRACKET, since the position of the other tape guides shall not change considerably.

6-4-1. PREPARATIONS FOR ADJUSTMENT

(1) Clean the tape transport surfaces. (See Fig. 6-4-1.)
(2) Connect the oscilloscope. Connect the channel 1 probe to the envelope waveform test point, and the channel 2 probe to the SW30 (RF SW P) test point. During adjustment, apply a trigger to the L side of SW30 (RF SW P) in order to monitor the waveform output from channel 1 of the video head.

Note: Since oscilloscope connection points differ according to the model, refer to Section 7-5, "TEST POINT FOR TAPE PATH ADJUSTMENT" in Section 7 "ELECTRICAL CIRCUIT ADJUSTMENT."

(3) Use a dentist's mirror for visual observation of the tape path condition.
(4) Use an eccentric driver (VHJ - 0003) for adjustment of the guide rollers.
(5) When adjusting the height of the guide rollers or the COMPL HEAD BRACKET, turn the special nut or the upper flange clockwise to push the tape downward, and counterclockwise to make the tape rise up.
(6) Do not use damaged cassette tapes for tape path adjustment.

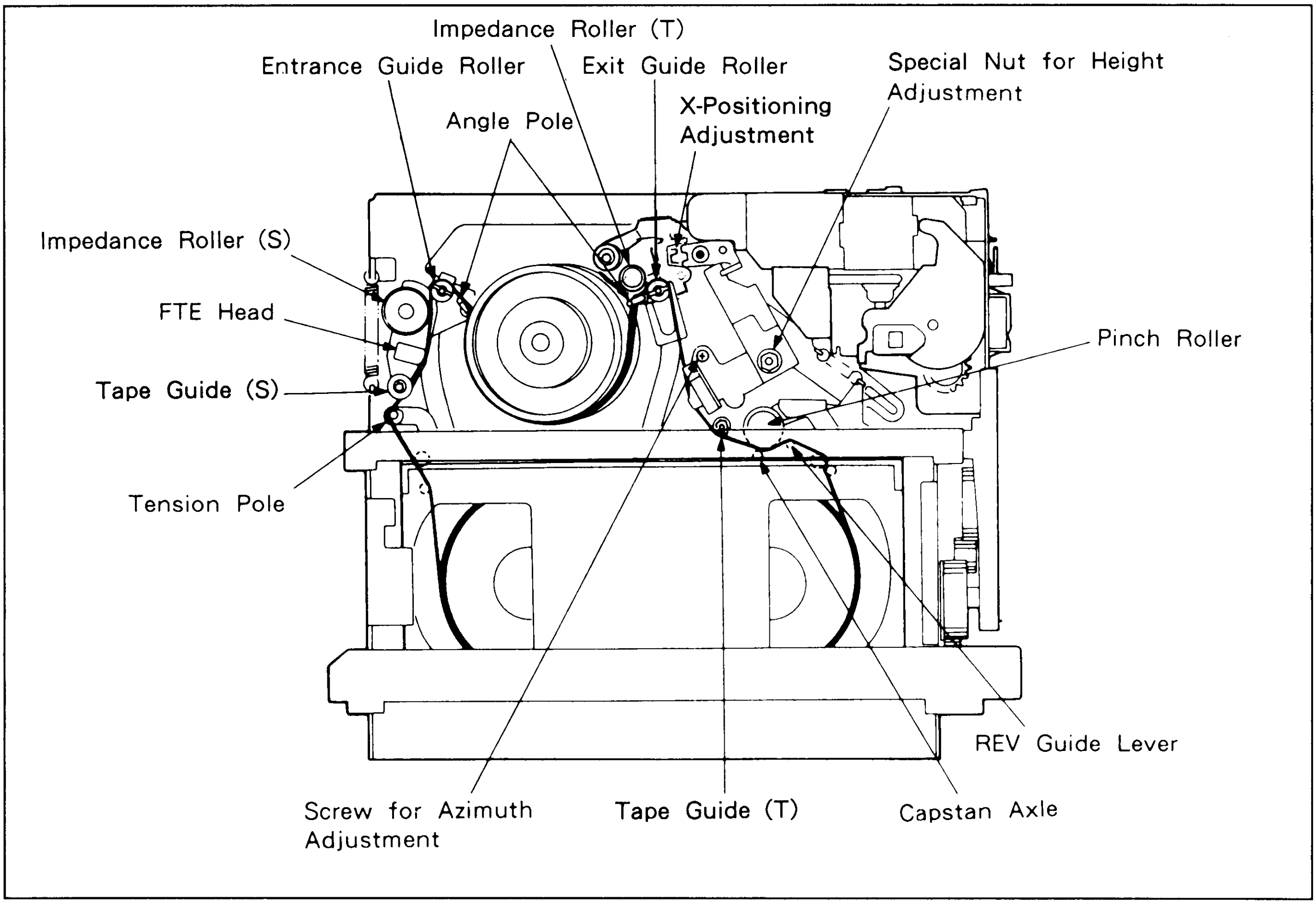
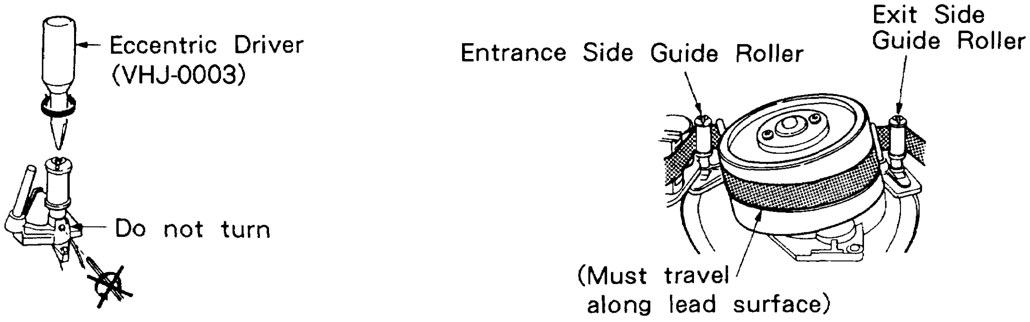

Impedance Roller (T)
Entrance Guide Roller
Exit Guide Roller
Special Nut for Height Adjustment
Angle Pole
X-Positioning Adjustment
Impedance Roller (S)
FTE Head
Tape Guide (S)
Pinch Roller
Tension Pole
REV Guide Lever
Screw for Azimuth Adjustment
Tape Guide (T)
Capstan Axle

Fig. 6-4-1. Preparation for Adjustment

6-4-2. GUIDE ROLLER ADJUSTMENT (See Fig. 6-4-2.)

1) Play back the alignment tape (VHJ-0009), press the tracking control key, and adjust the envelope waveform to its maximum level.
2) Loosen the entrance side and exit side guide rollers by rotating them counterclockwise, then rotate them clockwise alternately until a flat video output waveform is obtained.
3) Confirm that the envelope waveform is shaped correctly. Check visually that no curling occurs at the guide roller upper and lower flanges.
4) Press the tracking down (−) control key and set the envelope waveform level to approximately 50 % of the maximum. In this condition, confirm whether the envelope waveform is flat. It will show valleys or peaks in the first half (entrance side) or second half (exit side) if the tape running position is too high or too low.
   In case there is unevenness in the first half (entrance side), adjust the entrance side guide roller. If the second half (exit side) shows trouble, finely adjust the exit side guide roller.
5) Play back the recorded part of the E-180 cassette tape and check that there is no dropout in the first half. If there are problems, loosen the entrance side guide roller within 20°. Record and play back the tape again and check if there are any problems such as dropouts, and fluctuations, etc. in the first half.


Eccentric Driver
(VHJ-0003)
Do not turn
Entrance Side Guide Roller
Exit Side
Guide Roller
(Must travel
along lead surface)

The envelope waveform is a line when the waveform is 100% and a dotted line if when envelope waveform has been made 50% by tracking down (−).

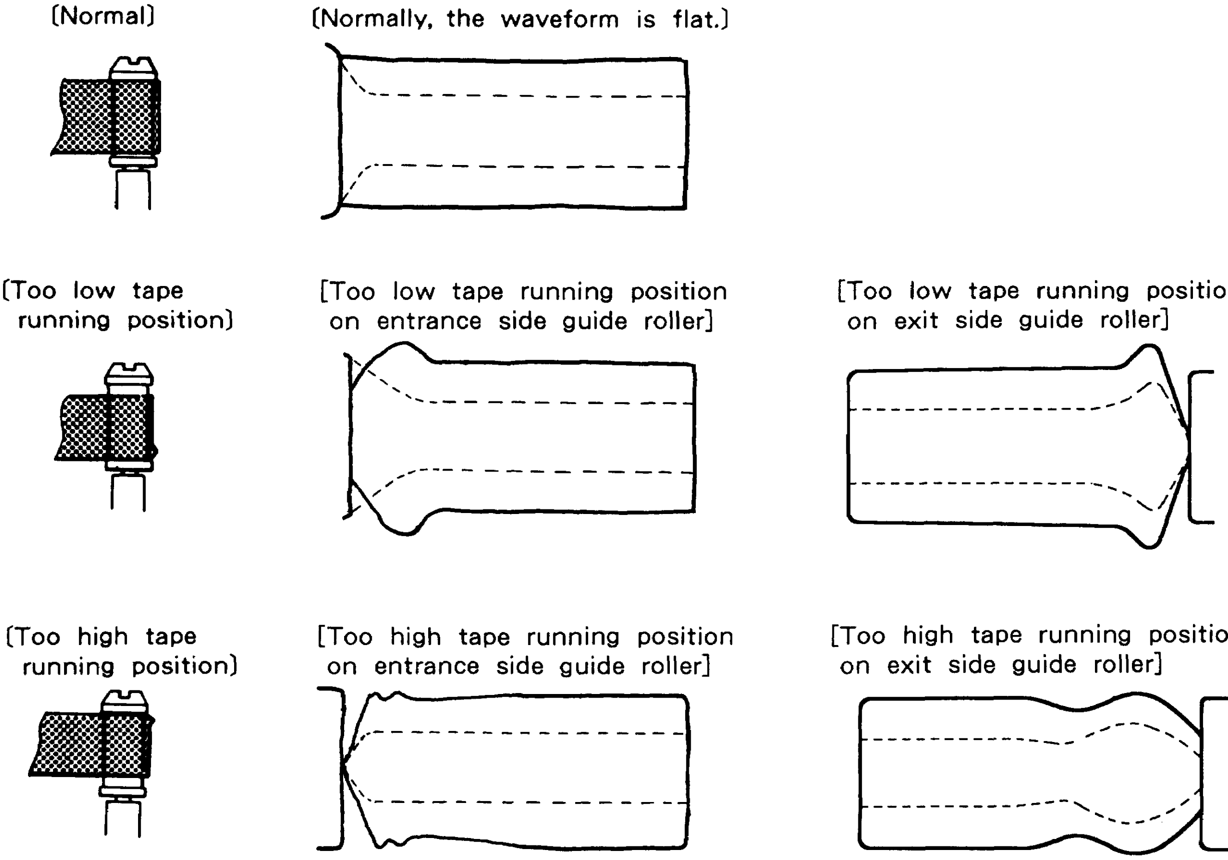

[Normal]
[Normally, the waveform is flat.]
[Too low tape
running position]
[Too low tape running position
on entrance side guide roller]
[Too low tape running position
on exit side guide roller]
[Too high tape
running position]
[Too high tape running position
on entrance side guide roller]
[Too high tape running position
on exit side guide roller]

Fig. 6-4-2. Guide Roller Adjustment

6-4-3. TAPE PATH CHECK OF ENTRANCE SIDE TAPE GUIDE (S) (See Fig. 6-4-3.)

The tape guide (S) of the entrance side does not require adjustment in this mechanism.
Confirm that the lower edge of the tape is running along the lower flange of the entrance side tape guide (S).
The tape should not be curled by the entrance side tape guide (S) lower flanges.

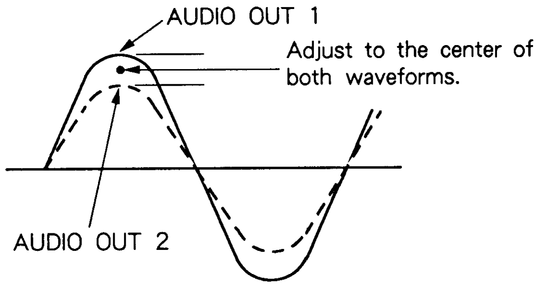
6-4-4. TAPE PATH CHECK OF EXIT SIDE TAPE GUIDE (T) (See Fig. 6-4-3.)

The tape guide (T) of the exit side does not require adjustment in this mechanism.
Confirm that the lower edge of the tape is running close to the lower flange of the exit side tape guide (T).
The tape should not be curled by the exit side tape guide (T) upper and lower flanges.

6-4-5. COMPL HEAD BRACKET (ACE HEAD) ADJUSTMENT

(1) Height Adjustment and Azimuth Adjustment (See Fig. 6-4-4.)

1) Load the alignment tape (VHJ-0008) and set to the PLAY mode.
2) Observe the waveforms of AUDIO OUT 1 pin and AUDIO OUT 2 pin on the rear panel using the oscilloscope.
3) Turn the special nut clockwise slowly after loosening a little, then adjust waveforms of AUDIO OUT 1 and AUDIO OUT 2 to maximize. If the points of both waveforms are different, adjust them to the center of waveforms.


AUDIO OUT 1
Adjust to the center of both waveforms.
AUDIO OUT 2

4) Load the alignment tape (VHJ-0009) and set to the PLAY mode.
5) Turn the azimuth adjustment screw, then adjust waveforms of AUDIO OUT 1 and AUDIO OUT 2 to maximize. If the phases of both waveforms are not equal, adjust them not to be the difference.

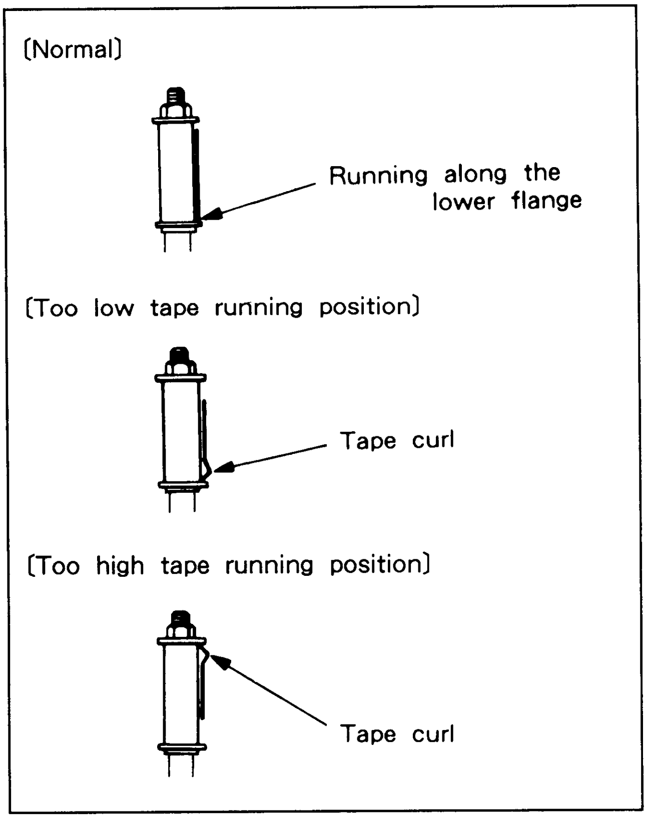

(Normal)
Running along the lower flange
(Too low tape running position)
Tape curl
(Too high tape running position)
Tape curl

Fig. 6-4-3. Tape Guide (S)

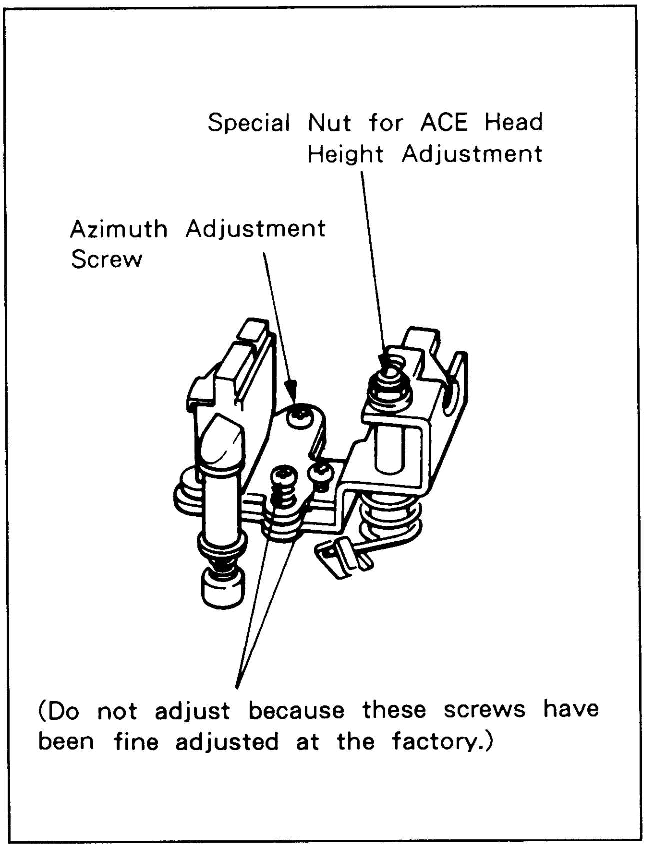

Special Nut for ACE Head Height Adjustment
Azimuth Adjustment Screw
(Do not adjust because these screws have been fine adjusted at the factory.)

Fig. 6-4-4. Compl Head Bracket

(2) Tracking (X-Value) Adjustment (See Fig. 6-4-5.)

1) Load the alignment tape (VHJ-0008).
2) During PLAY mode, press the tracking up (+) and tracking down (−) buttons together, and then reset the tracking to the center.
3) Rotate the stopper bracket fixing screw 180° counterclockwise.
4) Set to the PLAY mode and monitor the video head output envelope waveform.
5) Adjust the stopper bracket position so that the amplitude of the envelope waveform becomes maximum at the tracking center. Confirm that the envelope waveform amplitude changes by the same amount when shifting the tracking center by pressing the tracking up (+) and tracking down (−) keys.
6) Tighten the stopper bracket fixing screw.
7) Do servo circuit PB PHASE (switching position) adjustment and ACE head height adjustment.

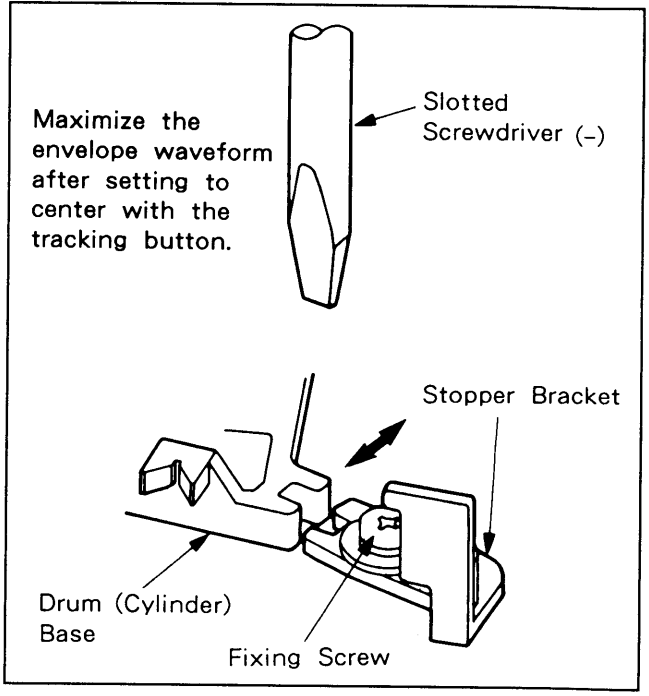

Maximize the envelope waveform after setting to center with the tracking button.
Slotted Screwdriver (-)
Stopper Bracket
Drum (Cylinder) Base
Fixing Screw

Fig. 6-4-5

6-4-6. CHECKING AFTER ADJUSTMENT

Tape running may show a slight change, depending on the type of cassette tape, the start, middle, or end of cassette tape winding, etc. After doing the tape path adjustment with an alignment tape, be sure to check the following points. Incidentally, the alignment tape to be used should be a good quality E-180 cassette without any damage to it.

(1) Try to play back the alignment tape (VHJ-0009) and confirm that the envelope waveform rises immediately and that there is no fluctuation in the envelope waveform and the audio output waveform.

(2) Load a E-180 cassette tape and start the recording operation in the standard mode. 1 kHz should be fed to the audio input terminal when recording. After recording, the following points should be checked.

1. When the recorded portion is played back, the envelope waveform rises immediately, and no fluctuation in the envelope waveform is observed. Also, no speed drop occurs during the first half waveform or the last half waveform. Further, check to be sure that no fluctuation occurs in the audio waveform. Also confirm that neither tape curling or derailing is caused on the upper or lower flange and on the lead side of the drum.
2. Confirm that no tape curling or derailing occurs in the upper or lower flange of each tape guide and the lead side of the drum during each mode of operation, namely, FF, REW, F. SEARCH, and R. SEARCH.
3. Confirm that the envelope waveform rises immediately after changing the mode directly to PLAY from each mode − FF, REW, F. SEARCH, R. SEARCH, or POWER OFF (INITIAL) − and that no tape curling or derailing occurs in the upper or lower flange of each tape guide and on the lead side of the drum.

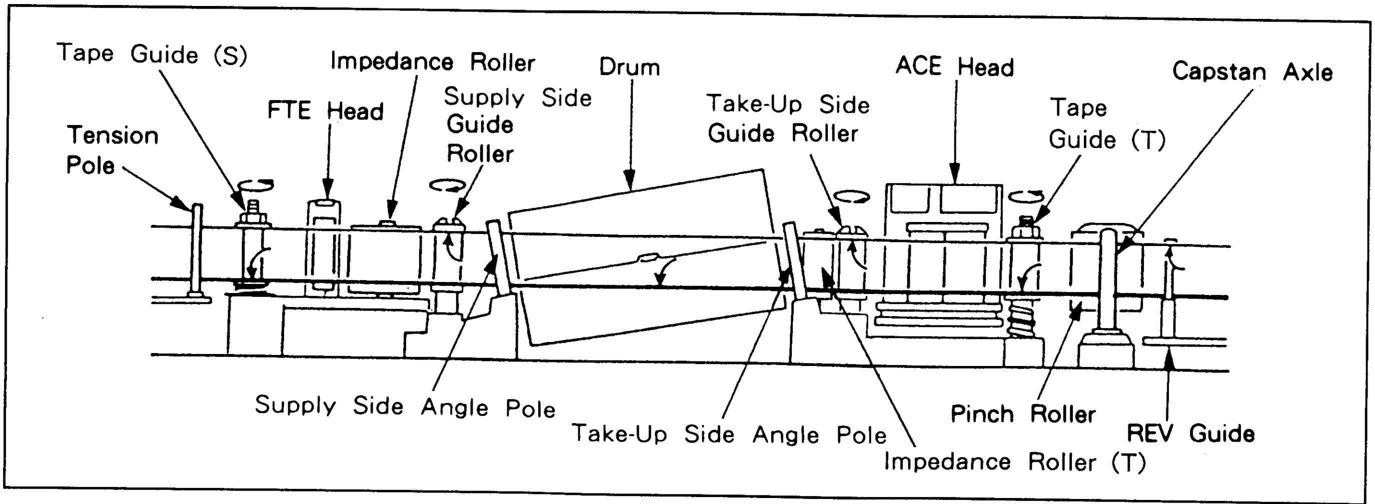

Tape Guide (S)
Impedance Roller
Drum
ACE Head
Capstan Axle
Tension Pole
FTE Head
Supply Side Guide Roller
Take-Up Side Guide Roller
Tape Guide (T)
Supply Side Angle Pole
Take-Up Side Angle Pole
Pinch Roller
REV Guide
Impedance Roller (T)

Fig. 6-4-6

7. ELECTRICAL ADJUSTMENT

7-1. SERVO CIRCUIT ADJUSTMENT

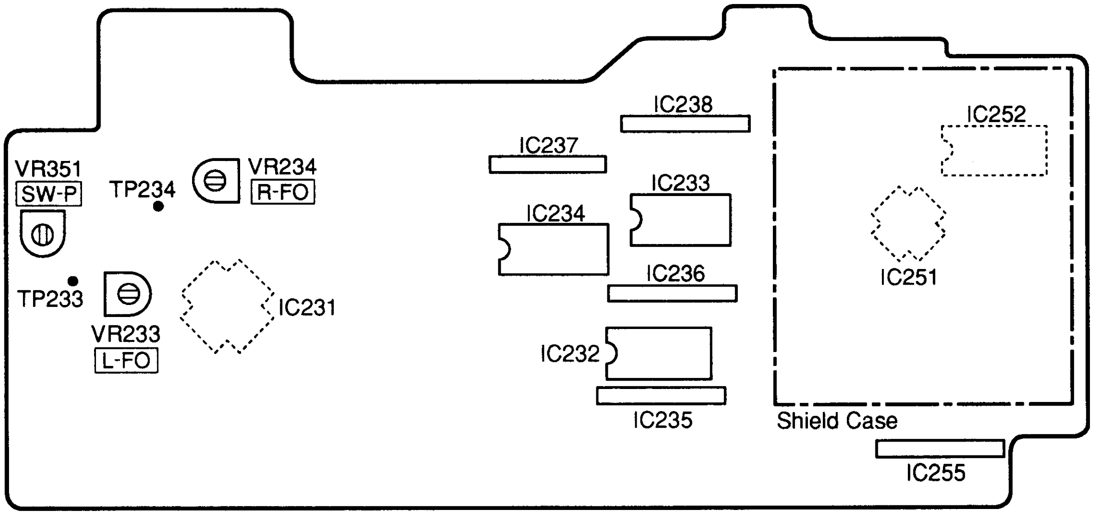
- These adjustments should be done upon completion of the tape transport adjustments.
- If the tape transport adjustments (except the tilt adjustment) are done after these adjustments, follow the procedures again in section 7-1-3. switching position adj.

7-1-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Oscilloscope	Vertical sensitivity : 5mV/DIV, external trigger Bandwidth : more than 10 MHz
Alignment Tape	VHJ-0009 or VHJ-0023 : SP mode, monoscope, 6 kHz
Bland Tape	VHS-type cassette tape
Monitor TV	

7-1-2. LOCATION OF ADJUSTMENT POINTS

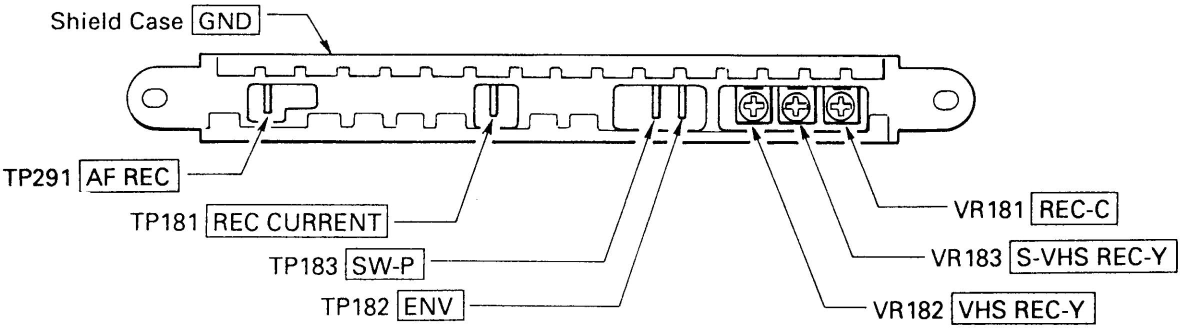
PIB42200A-S1


VR351
SW-P
TP234
VR234
R-FO
TP233
VR233
L-FO
IC231
IC238
IC237
IC233
IC234
IC236
IC232
IC235
IC252
IC251
Shield Case
IC255

AD-2 PWB (Parts side)

Fig. 7-1-1

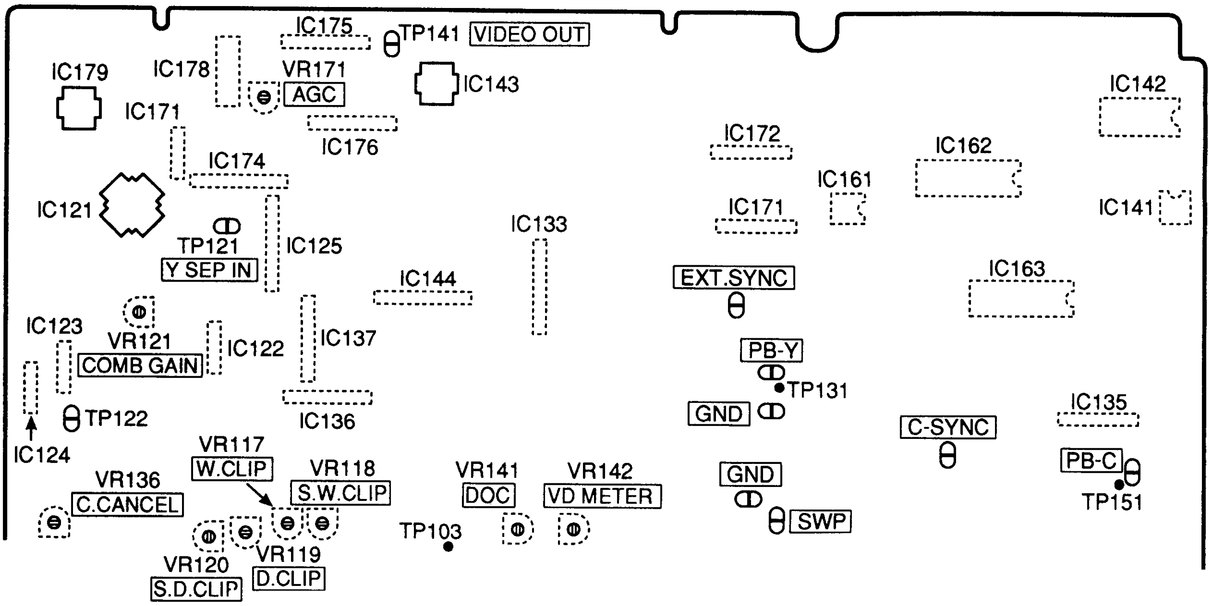
PIA51101B-S1


Shield Case GND
TP291 AF REC
TP181 REC CURRENT
TP183 SW-P
TP182 ENV
VR181 REC-C
VR183 S-VHS REC-Y
VR182 VHS REC-Y

VP-1 PWB Assembly

Fig. 7-1-2

PIB42800A-S1


IC175
TP141
VIDEO OUT
IC179
IC178
VR171
AGC
IC143
IC171
IC176
IC142
IC172
IC174
IC162
IC161
IC121
IC171
IC141
IC133
TP121
Y SEP IN
IC125
IC144
EXT.SYNC
IC163
IC123
VR121
COMB GAIN
IC122
IC137
PB-Y
TP131
IC136
GND
TP122
IC135
C-SYNC
IC124
VR117
W.CLIP
VR136
VR118
S.W.CLIP
VR141
DOC
VR142
VD METER
GND
PB-C
TP151
C.CANCEL
SWP
TP103
VR120
VR119
S.D.CLIP
D.CLIP

VD-1 PWB (Foil side)

Fig. 7-1-3

7-1-3. SWITCHING POSITION ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VD OUT) TP183 (SW-P)	Oscilloscope	PLAY mode Alignment tape VHJ-0009 or VHJ-0023

Adj. Location	Adj. value
VR351 (SW-P)	7.5 H ± 0.5 H

1. Turn VR351 (SW-P) fully clockwise (seeing from the parts side) in the STOP mode.
2. Select the FRAME SERVO switch and the TBC switch on the control panel to OFF position.
3. Set the tracking control to the center position by pressing COUSOR/TRACKING buttons (◄) and (►) simultaneously.
4. Play back the alignment tape and adjust VR351 (SW-P) so that the width of "T" becomes 6.5 H ± 0.5 H as shown in Fig. 7-1-4.

NOTE: If the adjustment value does not change by adjustment, repeat steps 1 through 3.

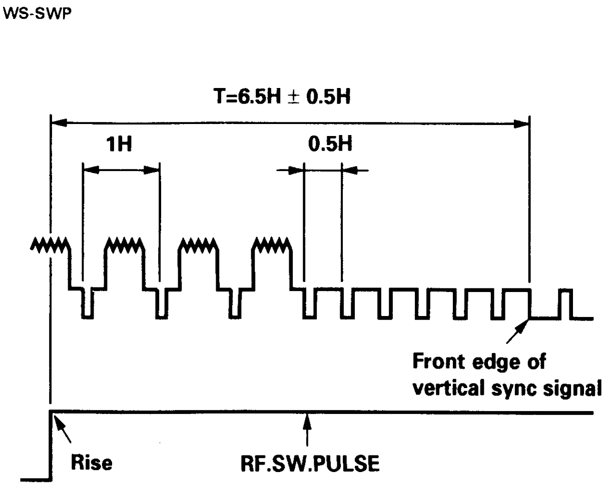

WS-SWP
T=6.5H ± 0.5H
1H
0.5H
Front edge of
vertical sync signal
Rise
RF.SW.PULSE

Fig. 7-1-4

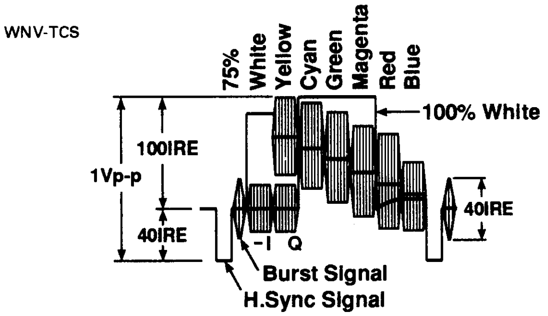
7-2. VIDEO CIRCUIT ADJUSTMENT

Before making the following adjustments, complete the adjustments described in section 7-1, "Servo Circuit."

7-2-1. TEST EQUIPMENT AND STANDARDS REQUIRED

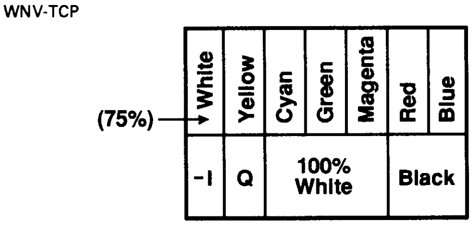
Color Bar Signal Generator	Color bar signal with 100% white level (EBU color bar signal)
Oscilloscope	Vertical sensitivity : 5 mV/DIV, external trigger Bandwidth : more than 10 MHz
Alignment Tape	VHJ-0008 or VHJ-0023 : SP mode, color bar, 1 kHz (Color bar signal waveform is described below. Refer to Fig. 7-2-1)
Blank Tape	VHS-type cassette tape
Oscilloscope Probe	Input capacity : less than 25 pF (10:1 probe) less than 40 pF (1:1 probe) Covering frequency : DC ~ 40 MHz (10:1 probe) DC ~ 30 MHz (1:1 probe)
Frequency Counter	8 significant digits
Alignment Jig	VHJ-0067 : 12-wire flat cable for VP-1 PWB assembly

ALIGNMENT TAPE COLOR BAR SIGNAL



COLOR BAR SIGNAL WAVEFORM (VNC-1)

Fig. 7-2-1



White	Yellow	Cyan	Green	Magenta	Red	Blue
-I	Q	100% White		Black		

COLOR BAR PATTERN (VNC-1) ON MONITOR TV

Fig. 7-2-2

ADJUSTMENT RELAY JIG

Connect the flat cable end from the cylinder assembly to the VP-1 PWB assembly using the relay jig to provide simple repairing or adjustment of the VP-1 PWB assembly, as shown in Fig. 7-2-3. Further, when adjusting the VP-1 PWB assembly, be sure to make contact an end of shield case with bracket of the VP-1 PWB assembly to maintain the shield effect. If the VP-1 PWB assembly does not contact, there is insufficient ground and no proper play image can be obtained.

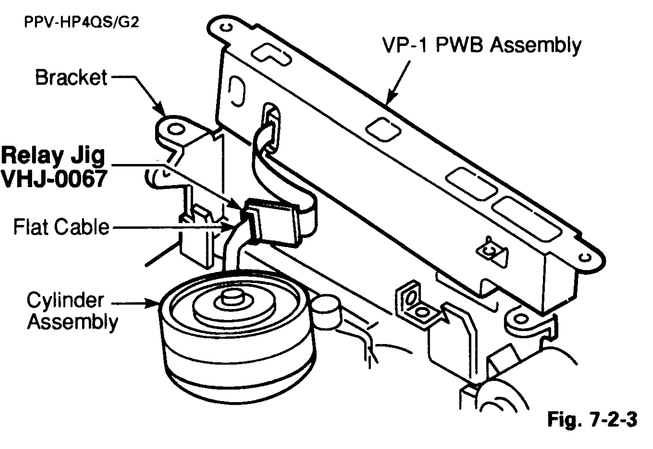
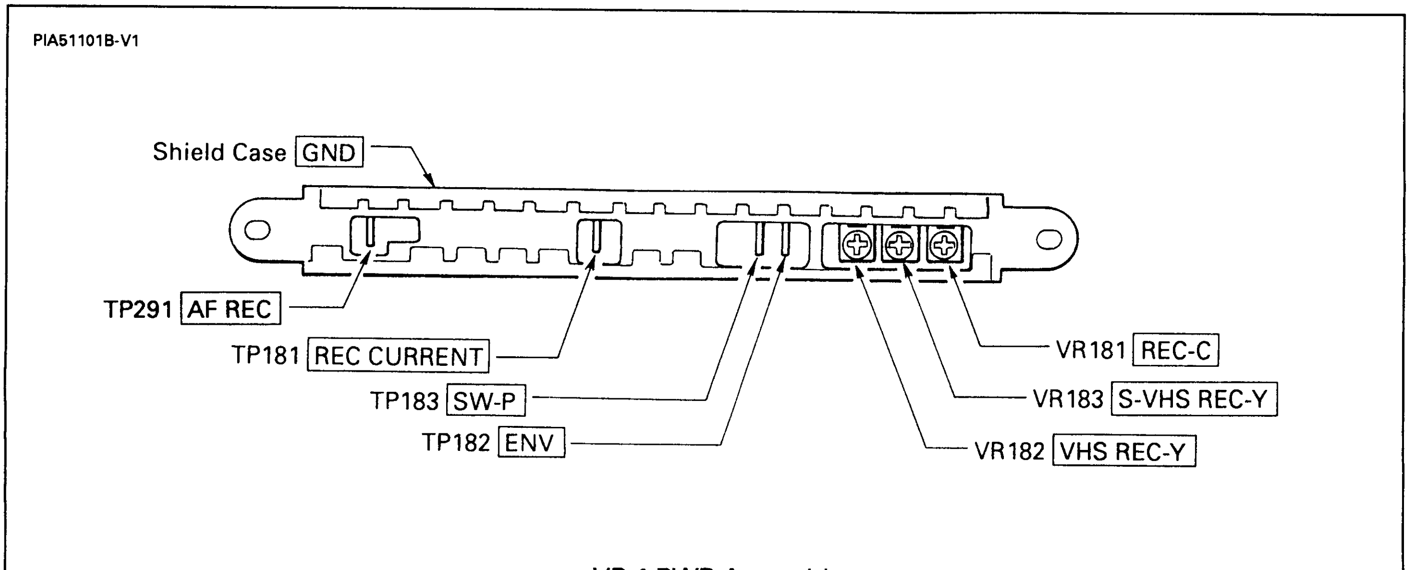


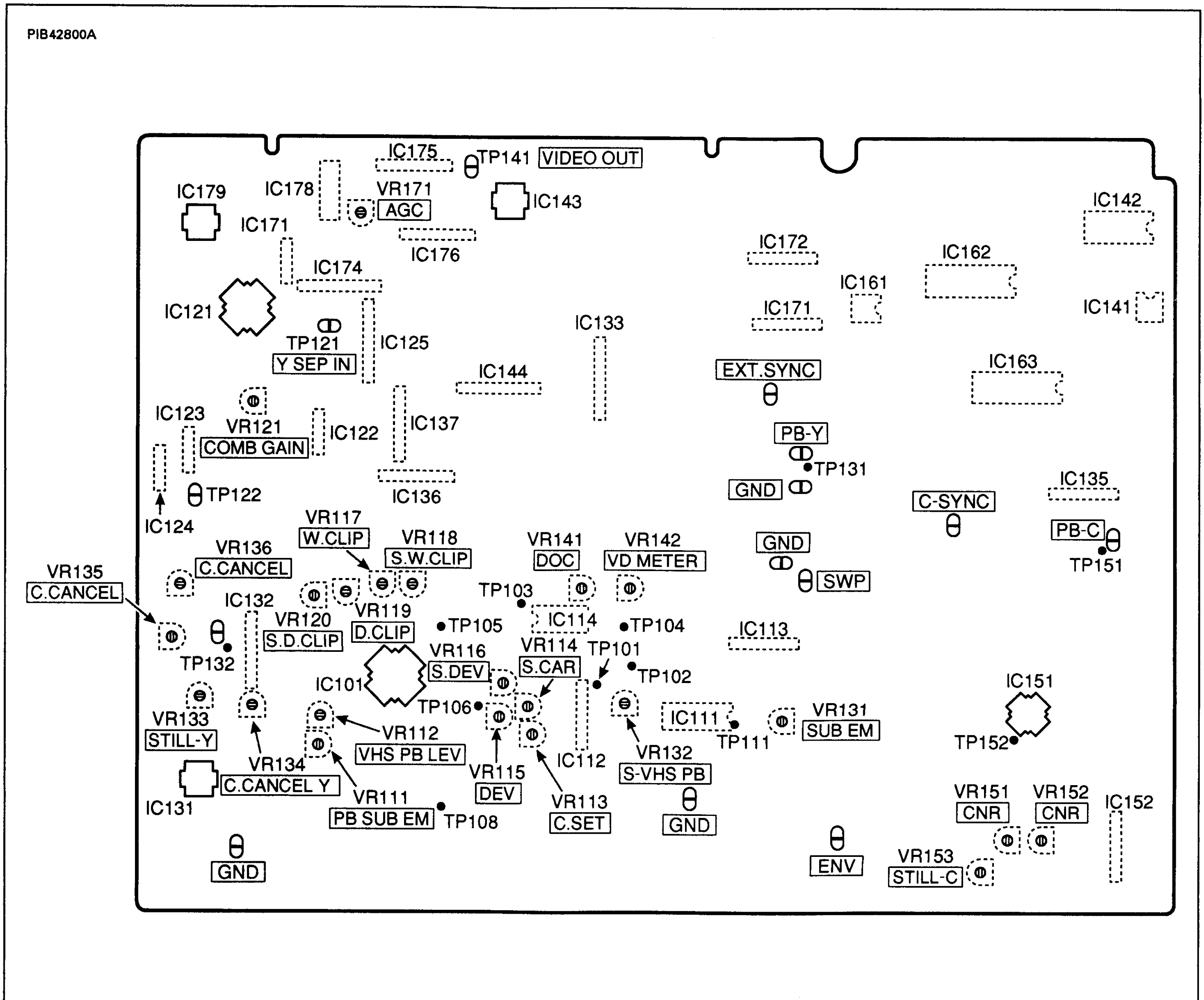
Fig. 7-2-3

7-2-2. LOCATION OF ADJUSTMENT POINTS


PIA51101B-V1
Shield Case GND
TP291 AF REC
TP181 REC CURRENT
TP183 SW-P
TP182 ENV
VR181 REC-C
VR183 S-VHS REC-Y
VR182 VHS REC-Y

VP-1 PWB Assembly

Fig. 7-2-4


PIB42800A
IC175
TP141 VIDEO OUT
IC179
IC178
VR171
AGC
IC143
IC142
IC171
IC176
IC172
IC162
IC174
IC161
IC121
IC171
IC141
TP121
Y SEP IN
IC125
IC133
EXT.SYNC
IC144
IC163
IC123
VR121
COMB GAIN
IC122
IC137
PB-Y
TP131
GND
IC135
TP122
IC136
C-SYNC
IC124
VR117
W.CLIP
VR118
S.W.CLIP
VR141
DOC
VR142
VD METER
GND
PB-C
VR136
C.CANCEL
SWP
TP151
VR135
C.CANCEL
IC132
TP103
VR120
S.D.CLIP
VR119
D.CLIP
TP105
IC114
TP104
IC113
TP132
VR116
S.DEV
VR114
S.CAR
TP101
TP102
IC101
IC151
TP106
IC111
TP111
VR131
SUB EM
VR133
STILL-Y
VR112
VHS PB LEV
VR132
S-VHS PB
TP152
VR134
C.CANCEL Y
VR115
DEV
IC112
IC131
VR111
PB SUB EM
TP108
VR113
C.SET
GND
VR151
CNR
VR152
CNR
IC152
GND
ENV
VR153
STILL-C

VD-1 PWB (Foil side)

Fig. 7-2-5

Notes:

- Set the following switches to the positions indicated below, before making following adjustments.

SWITCH	POSITION
VIDEO AGC	ON
VIDEO	COMPOSITE
S-VHS	OFF (except specification)
VIDEO input	IN 1
TBC	OFF

- Self-recording means "Record the video signal and play back the just-recorded portion".

7-2-3. COMB GAIN ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP121 TP122	Oscilloscope Color bar generator	E-E mode

Adj. Location	Adj. value
VR121 (COMB GAIN)	—

1. Connect the color bar generator to the VIDEO IN 1 terminal.
2. Adjust the VR121 (COMB GAIN) for the video luminance signal at TP121 and TP122 becomes same level.

7-2-4. AGC LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Color bar generator Oscilloscope (10 : 1 probe)	E-E mode

Adj. Location	Adj. value
VR171 (AGC)	1.0 Vp-p ± 20 mVp-p

1. Connect the color bar generator to the VIDEO IN 1 terminal.
2. Terminate the VIDEO OUT terminal with a 75 Ω resistor.
3. Adjust VR171 (AGC) for 1.0 Vp-p ± 20 mVp-p as shown in Fig. 7-2-7.

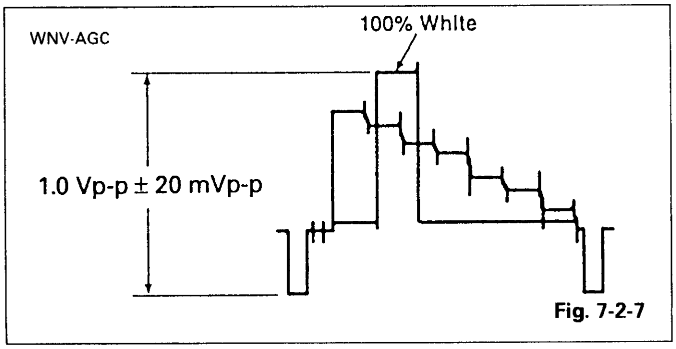


Fig. 7-2-7

7-2-5. SUB EMPHASIS REC LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP111	Color bar generator Oscilloscope	E-E mode

Adj. Location	Adj. value
VR131 (SUB EM)	400 mVp-p ± 10 mVp-p

1. Connect the color bar generator (100% White level) to the VIDEO IN 1 terminal.
2. Adjust VR131 (SUB EM) for the video luminance signal level of 400 mVp-p ± 10 mVp-p as shown in Fig. 7-2-8.

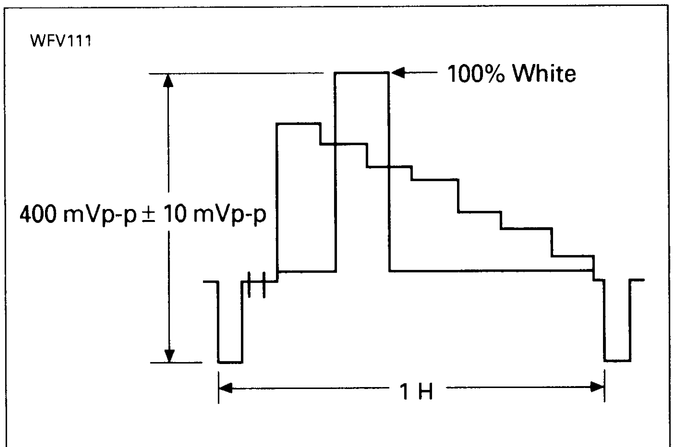


Fig. 7-2-8

7-2-6. DOC LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP105	Oscilloscope Color bar generator	E-E mode

Adj. Location	Adj. value
VR141 (DOC)	—

1. Connect the color bar generator to the VIDEO IN 1 terminal.
2. Adjust VR141 (DOC) for the minimum video luminance signal level as shown in Fig. 7-2-9.

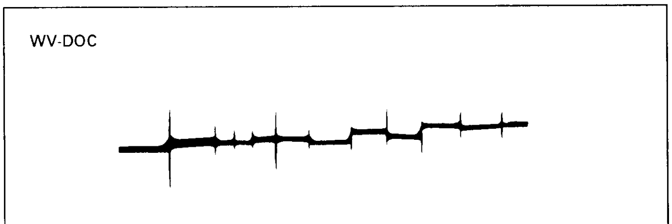


Fig. 7-2-9

7-2-7. VHS PB-Y LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope	PLAY mode Alignment tape (VHJ-0008)

Adj. Location	Adj. value
VR112 (VHS PB LEV)	1.0 Vp-p ± 20 mVp-p

1. Terminate the VIDEO OUT terminal with a 75Ω resistor.
2. Play back the alignment tape.
3. Adjust VR112 (VHS PB LEV) for the video luminance signal level of 1.0 Vp-p ± 20 mVp-p as shown in Fig. 7-2-10.

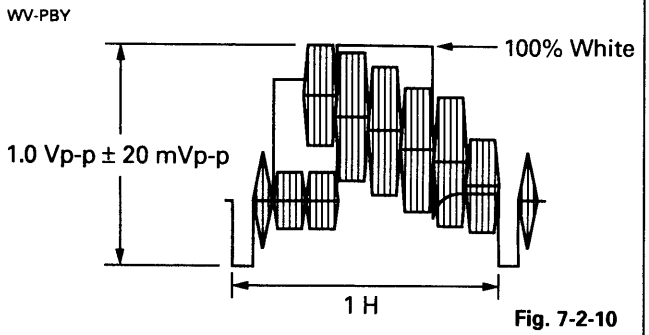


Fig. 7-2-10

7-2-8. SUB EMPHASIS PB LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP111	Oscilloscope	PLAY (S-VHS) mode, Alignment tape VHJ-0068

Adj. Location	Adj. value
VR111 (PB SUB EM)	400 mVp-p ± 20 mVp-p

1. Play back the alignment tape.
2. Adjust VR111 (PB SUB EM) for the video luminance signal level of 400 mVp-p ± 20 mVp-p as shown in Fig. 7-2-11.

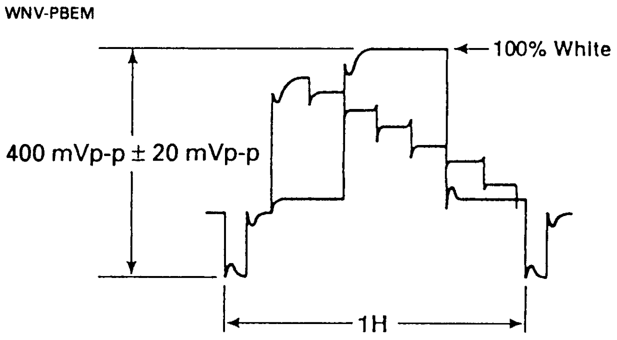


Fig. 7-2-11

7-2-9. S-VHS PB-Y LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope	PLAY (S-VHS) mode, Alignment tape VHJ-0068

Adj. Location	Adj. value
VR132 (S-VHS PB)	1.0 Vp-p ± 20 mVp-p

1. Terminate the VIDEO OUT terminal with a 75Ω resistor.
2. Play back the alignment tape.
3. Adjust VR132 (S-VHS PB) for 1.0 Vp-p ± 20 mVp-p as shown in Fig. 7-2-12.

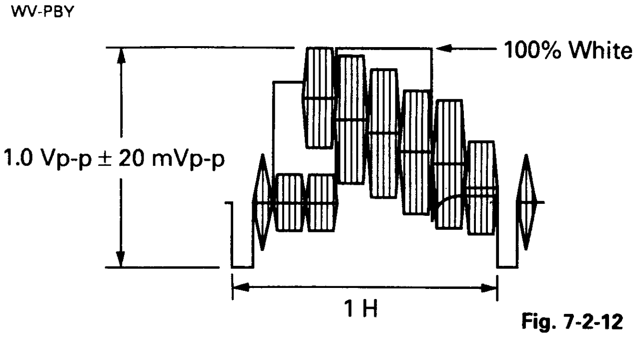


Fig. 7-2-12

7-2-10. CHROMA NOISE REDUCTION ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP152	Oscilloscope	PLAY mode, Alignment tape (VHJ-0068 or VHJ-0008)

Adj. Location	Adj. value
VR151 (CNR)	—
VR152 (CNR)	—

1. Play back the alignment tape.
2. Adjust VR151 and VR152 (CNR) alternately for the minimum video chrominance signal level as shown in Fig.7-2-13.

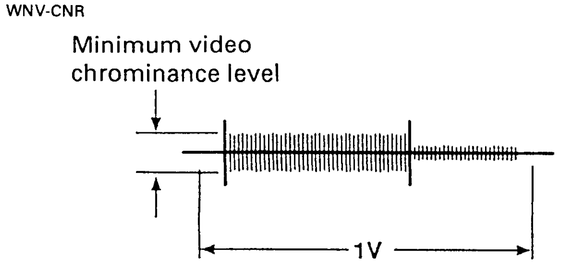


Fig. 7-2-13

7-2-11. STILL-C LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP151	Oscilloscope	STILL (PLAY) mode Alignment tape (VHJ-0068 or VHJ-0008)

Adj. Location	Adj. value
VR153 (STILL-C)	—

1. Play back the alignment tape and set the STILL mode.
2. Adjust VR153 (STILL-C) so that the maximum amplitudes of the chroma signals adjoined by a period of 1 V become the same.

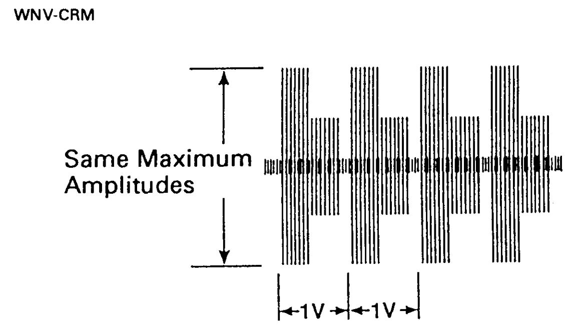


Fig. 7-2-14

7-2-12. STILL-Y LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP131	Monitor TV	STILL (PLAY) mode Alignment tape (VHJ-0068 or VHJ-0008)

Adj. Location	Adj. value
VR133 (STILL-Y)	—

1. Play back the alignment tape and set the STILL mode.
2. Adjust VR133 (STILL-Y) so that the flicker on the color bar shown on the monitor screen disappears (where the white 100% is clear).

7-2-13. CHROMA CANCELLER Y LEVEL

Measuring Point	Measuring Equipment	Adj. Condition
TP132	Oscilloscope Color bar generator	E-E mode

Adj. Location	Adj. value
VR134 (C. CANCEL Y)	—

1. Connect the color bar generator to the VIDEO IN 1 terminal.
2. Adjust VR134 (C. CANCEL Y) for the minimum video luminance signal level as shown in Fig. 7-2-15.

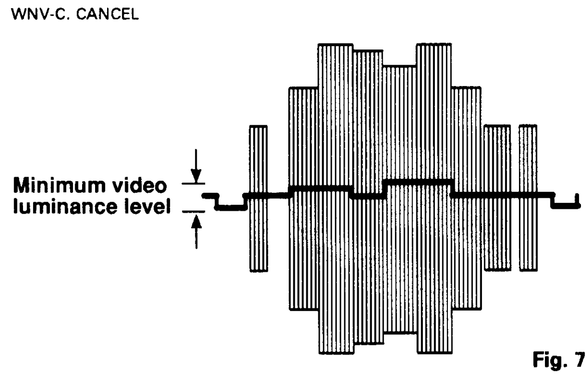


Fig. 7-2-15

7-2-14. CHROMA CANCELLER ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP131	Oscilloscope Color bar generator	E-E mode

Adj. Location	Adj. value
VR135 (C. CANCEL)	—
VR136 (C. CANCEL)	—

1. Connect the color bar generator to the VIDEO IN 1 terminal.
2. Adjust the VR135 and VR136 (C. CANCEL) alternately for the minimum video chrominance signal level as shown in Fig. 7-2-16.

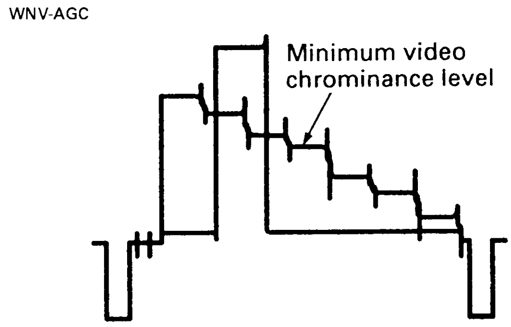


Fig. 7-2-16

7-2-15. VHS WHITE CLIP & DARK CLIP ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP106	Oscilloscope Color bar generator	REC (VHS) mode Blank tape (VHS)

Adj. Location	Adj. value
VR117 (W. CLIP)	200% ± 5%
VR119 (D. CLIP)	50% ± 5%

1. Connect the color bar generator (100% White level) to the VIDEO IN1 terminal.
2. Adjust VR117 (W. CLIP) for the video luminance signal level of 200% ± 5% as shown in Fig. 7-2-17.
3. Adjust VR119 (D.CLIP) for the video luminance signal level of 50% ± 5% as shown in Fig. 7-2-17.

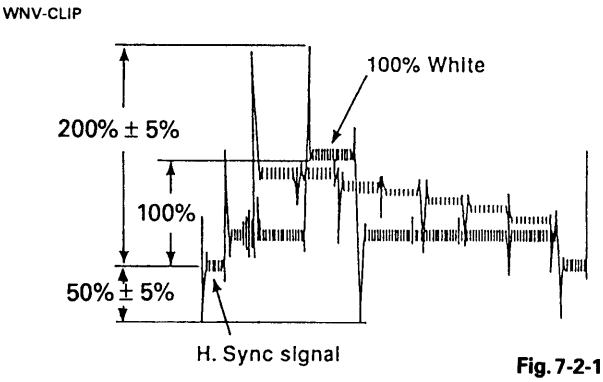


Fig. 7-2-17

7-2-16. S-VHS WHITE CLIP & DARK CLIP ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP106	Oscilloscope Color bar generator	REC (S-VHS) mode, Blank tape (S-VHS)

Adj. Location	Adj. value
VR118 (S.W. CLIP)	210 % ± 5 %
VR120 (S.D. CLIP)	70 % ± 5 %

1. Set the S-VHS switch to the ON position.
2. Connect the color bar generator (100% White level) to the VIDEO IN 1 terminal.
3. Adjust VR118 (S.W. CLIP) for the video luminance signal level of 210% ± 5% as shown in Fig. 7-2-18.
4. Adjust VR120 (S.D. CLIP) for the video luminance signal level of 70% ± 5% as shown in Fig. 7-2-18.

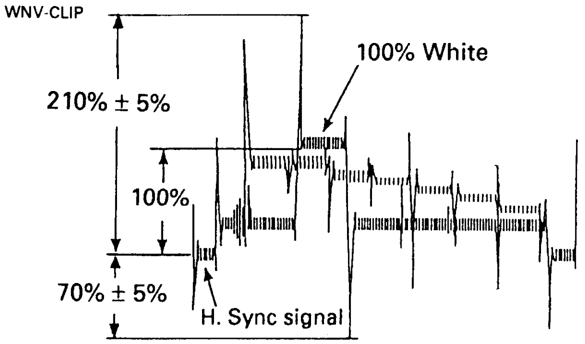


Fig. 7-2-18

7-2-17. VHS CARRIER SET ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP108	Frequency counter	REC (VHS) mode Blank tape (VHS)

Adj. Location	Adj. value
VR113 (C. SET)	3.8 MHz ± 30 kHz

1. Connect the frequency counter to TP108.
2. Disconnect every input signal from VIDEO input terminals.
3. Adjust VR113 (C. SET) so that in zero level signal status the frequency at TP108 becomes 3.8 MHz ± 30 kHz.

7-2-18. VHS DEVIATION ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope Color bar generator Frequency counter	Self-recording (VHS) mode Blank tape (VHS)

Adj. Location	Adj. value
VR115 (DEV)	1.0 Vp-p ± 20 mVp-p

1. Terminate the VIDEO OUT terminal with a 75Ω resistor.
2. Connect the color bar generator (100% White level) to the VIDEO IN 1 terminal.
3. Play back the just-recorded portion.
4. Adjust VR115 (DEV) for 1.0 Vp-p ± 20 mVp-p as shown in Fig. 7-2-19.
5. Confirm that the frequency counter's reading at TP108 (VHS CAR. SET ADJ.) is 3.8 MHz ± 30 kHz.
6. Repeat steps 7-2-17 and 7-2-18 if necessary.

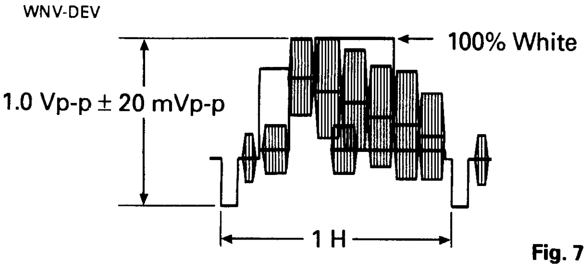


Fig. 7-2-19

7-2-19. S-VHS CARRIER SET ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP108	Frequency counter	REC (S-VHS) mode

Adj. Location	Adj. value
VR114 (S. CAR)	5.4 MHz ± 20 kHz

1. Set the S-VHS switch to the ON position.
2. Connect the frequency counter to TP108.
3. Disconnect every input signal from VIDEO input terminals.
4. Adjust VR114 (S. CAR) so that in zero level signal status the frequency at TP108 becomes 5.4 MHz ± 20 kHz.

7-2-20. S-VHS DEVIATION ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope Color bar generator Frequency counter	Self-recording (S-VHS) mode Blank tape (S-VHS)

Adj. Location	Adj. value
VR116 (S. DEV)	1.0 Vp-p ± 20 mVp-p

1. Set the S-VHS switch to the ON position.
2. Terminate the VIDEO OUT terminal with a 75Ω resistor.
3. Connect the color bar generator (100% White level) to the VIDEO IN 1 terminal.
4. Play back the just-recorded portion.
5. Adjust VR116 (S. DEV) for 1.0 Vp-p ± 20 mVp-p as shown in Fig. 7-2-20.
6. Confirm that the frequency counter's reading at TP108 (S-VHS CAR. SET ADJ.) is 5.4 MHz ± 20 kHz.
7. Repeat steps 7-2-19 and 7-2-20 if necessary.

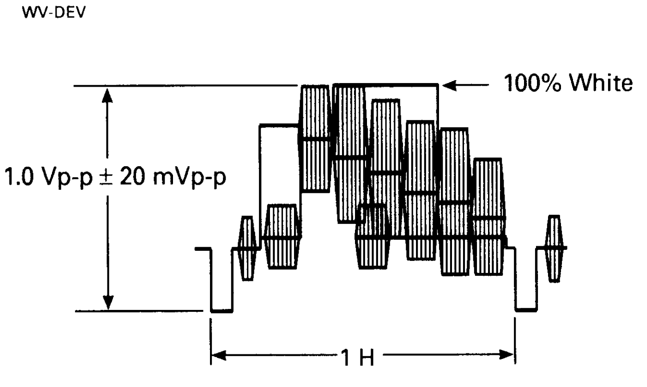


Fig. 7-2-20

7-2-21. VIDEO LEVEL METER ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
Video level meter	Color ber generator Oscilloscope (1:1 probe)	E-E mode

Adj. Location	Adj. value
VR142 (VD METER)	—

1. Set the LEVEL METER switch to VIDEO position.
2. Input the 100% color bar signal.
3. Adjust VR142 (VD METER) so that the level meter reads the level near the 100% level line and where there are no red (or no orange) lighting at the same time.

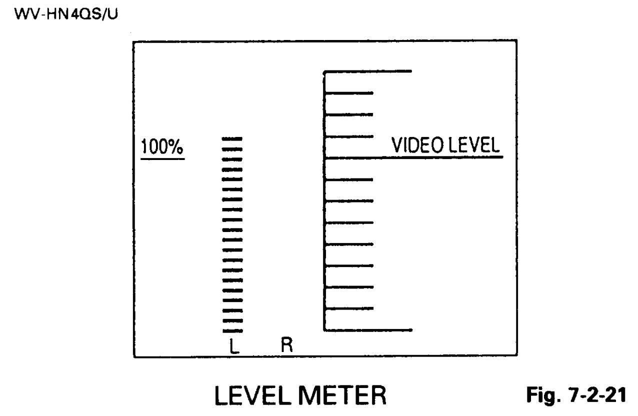


Fig. 7-2-21

Note: Fig. 7-2-21 shows before the front panel is removed.

7-2-22. VHS Y/C REC CURRENT ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP181(on VP-1 PWB assembly) shield case (GND)	Oscilloscope Color bar generator	REC (VHS/S-VHS) mode Blank tape (S-VHS)

Adj. Location	Adj. value
VR181 (REC-C)	120 mVp-p ± 5 mVp-p
VR182 (VHS REC-Y)	330 mVp-p ± 10 mVp-p

1. Remove the 3-pin connector from CN572 of the PW-1 PWB.
2. Connect the color bar generator to the VIDEO IN 1 terminal.
3. For the minimum video luminance signal level as shown in Fig. 7-2-23, rotate VR182 (VHS REC-Y) counter-clockwise fully.
4. Adjust VR181 (REC-C) for the chrominance signal level of 120 mVp-p ± 5 mVp-p as shown in Fig. 7-2-23.
5. Adjust VR182 (VHS REC-Y) so that in zero level signal status the video luminance signal level at TP181 becomes **330 mVp-p ± 10 m Vp-p**. (Refer to Fig. 7-2-24.)

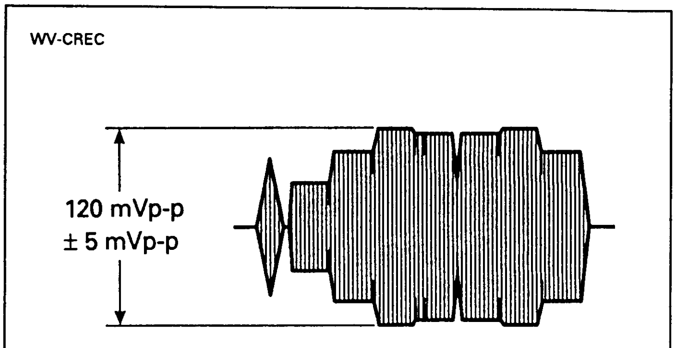


Fig. 7-2-23

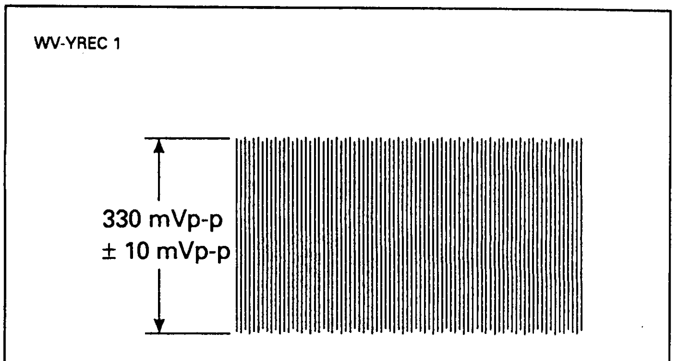


Fig. 7-2-24

7-2-23. S-VHS Y REC CURRENT ADJ.

Measuring Point	Measuring Equipment	ADJ. Condition
TP181 (on VP-1 PWB assembly) shield case (GND)	Oscilloscope	REC (S-VHS) mode, Blank tape (S-VHS)

ADJ. Location	ADJ. value
VR183 (S-VHS REC-Y)	360 mVp-p ± 10 mVp-p

1. Connect the ground of the oscilloscope to the shield case of the VP-1 PWB assembly.
2. Set the S-VHS switch to the ON position.
3. Adjust VR183 (S-VHS REC-Y) so that in zero level signal status the video luminance signal level at TP181 becomes 360 mVp-p ± 10 mVp-p. (Refer to Fig. 7-2-25.)
4. Connect the 3-pin connector as it was.

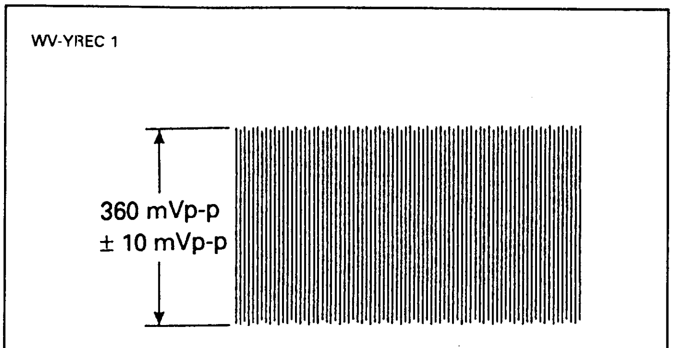


Fig. 7-2-25

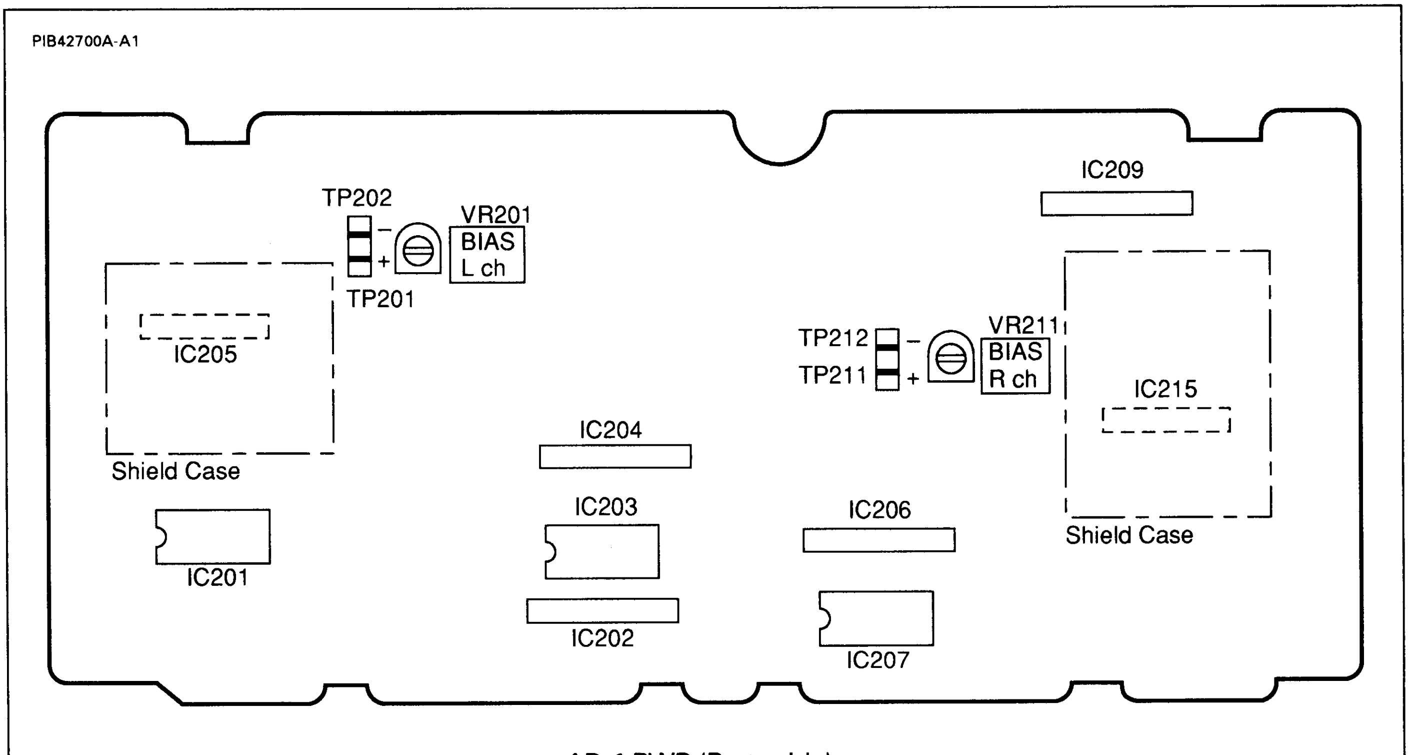
7-3. AUDIO CIRCUIT ADJUSTMENT

- Before making these adjustments, be sure to make the adjustments described in the tape path adjustment, especially the ACE heads adjustments (refer to the separate volume "Mechanism Manual") so that the tape traveling between the supply side guide roller and loading guide post runs without fluttering, twisting, curling.
- Before making these adjustments, (except the ACE heads adjustments), be sure to make the adjustments described in section 7-1, " Servo Circuit." and section 7-2, " Video Circuit."

7-3-1. TEST EQIPMENT AND STANDARDS REQUIRED

Standard Audio Signal Generator (SG)	Output frequency Output level Output impedance Distortion ratio Output in use SG	: 10 Hz ~ 100 kHz : more than 1 Vrms : 600 Ω : less than 0.05 % : Frequency:....... 1 kHz, 10 kHz (switchable) Output level: ....–28 dBs,–8 dBs
Color Bar Signal Generator	Color bar signal with 100 % white level. (Signal waveform is described before. Refer to Fig. 7-2-1.)	
Oscilloscope	Vertical sensitivity Bandwidth	: 5 mV/DIV : more than 30 MHz
AC Voltmeter	Effective value indication Input frequency Input impedance Measurement level	 : 10 Hz ~ 20 kHz : more than 1 MΩ : 1 mV (full scale)
Frequency Counter	Input frequency	: 20 Hz ~ 10 MHz
Blank Tape	VHS-type cassette tape	
Dummy Plug	RCA plug, Shorting type	

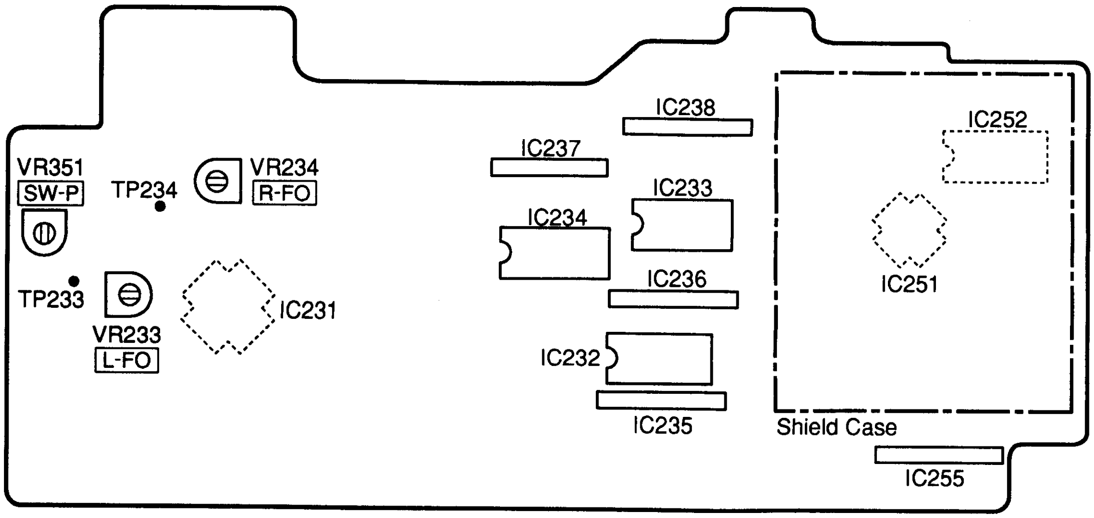
7-3-2. LOCATION OF ADJUSTMENT POINTS


PIB42700A-A1
TP202
TP201
VR201
BIAS
L ch
IC205
Shield Case
IC201
IC204
IC203
IC202
TP212
TP211
VR211
BIAS
R ch
IC206
IC207
IC209
IC215
Shield Case

AD-1 PWB (Parts side)

Fig. 7-3-1

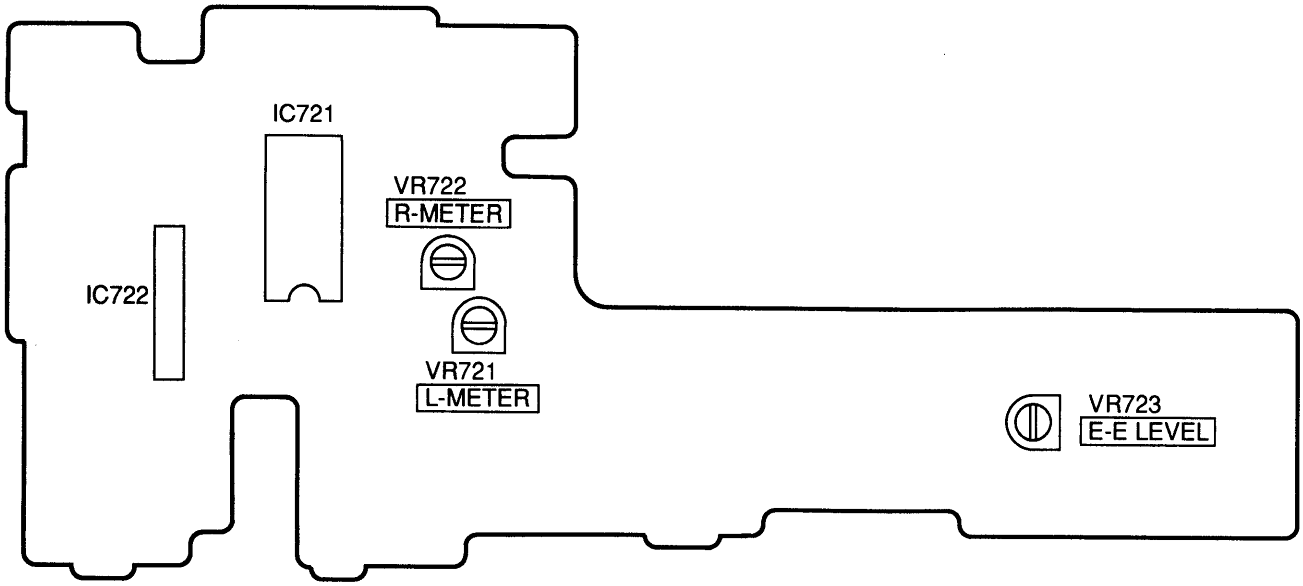
PIB 42200A-A1


IC238
IC237
IC252
VR351
SW-P
TP234
VR234
R-FO
IC233
IC234
IC251
TP233
IC236
IC231
VR233
L-FO
IC232
IC235
Shield Case
IC255

AD-2 PWB (Parts side)

Fig. 7-3-2

PIB43400A-A1


IC721
VR722
R-METER
IC722
VR721
L-METER
VR723
E-E LEVEL

TM-2 PWB (Parts side)

Fig. 7-3-3

AUDIO MORMAL CIRCUIT

Notes:

- Set the following switch to the positions indicated below, before making following adjustments.

SWITCH	POSITION
AUDIO INPUT	IN 1

- Self-recording means "Record the audio signal and play back the just-recorded portion".

7-3-3. E-E LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
AUDIO OUT terminal (L, R)	Oscilloscope AC voltmeter	E-E mode

Adj. Location	Adj. value
VR723 (E-E)	-8 ± 0.5 dBs

1. Press the CURSOR buttons (▲) or (▼) on the control panel to select "MENU 1" mode.
2. Set the volume control to the center position by pressing the CURSOR/TRACKING buttons (◄) or (►), display "------⊞------" in the "MENU 1" screen.
3. After confirming on the osilloscope that a 1 kHz sine wave is being output, adjust VR723 (E-E) so that the AC voltmer's reading is **-8 ± 0.5 dBs**.

7-3-4. BIAS LEVEL ADJ.

[A]

Measuring Point	Measuring Equipment	Adj. Condition
Lch: TP201 (HOT) TP202 (COLD) Rch: TP211 (HOT) TP212 (COLD)	Oscilloscope AC voltmeter Frequency counter	REC mode Blank tape

Adj. Location	Adj. value
VR201 (BIAS Lch)	36 mVrms
VR211 (BIAS R ch)	36 mVrms

1. Load the VCR with a blank tape and select the record mode without all incoming signal.
2. After confirming on the oscilloscope that a 67 kHz ± 3 kHz sine wave is being output, adjust VR201 (BIAS Lch) so that the AC voltmeter's reading is 36 mVrms, and adjust VR211 (BIAS Rch) so that the AC voltmeter's reading is 38 mVrms.

[B]

Measuring Point	Measuring Equipment	Adj. Condition
AUDIO OUT terminal (L, R)	Oscilloscope AC voltmeter Standard audio signal generator (SG: signal –28 dBs, 1kHz –28 dBs, 10 kHz)	Self-recording Blank tape

Adj. Location	Adj. value
VR201 (BIAS Lch) VR211 (BIAS Rch)	–4 dB ~ +4 dB between 1 kHz and 10 kHz

1. Connect the standard audio signal generator to the AUDIO IN 1 terminal (L, R).
2. Set the standard audio signal generator's output level to –28 dBs.
3. Set the standard audio signal generator's frequency to 1 kHz and then 10 kHz, record each of these frequency signals.
4. Play back each of the just-recorded portion.
5. Confirm that the 10 kHz level on AC voltmeter's reading is from –4 dB to +4 dB, compared with 1 kHz level.
6. If the 10 kHz level is less than –4 dB below 1 kHz level or more than +4 dB above 1 kHz level, rotate VR201 (BIAS Lch) and VR211 (BIAS Rch) slightly to adjust it.
7. Repeat steps 3 through 6 if necessary.

AUDIO FM (Hi-Fi) CIRCUIT

Note:

- Set the following switch to the positions indicated below, before making following adjustments.

SWITCH	POSITION
AUDIO INPUT	IN 1
HIFI	ON

7-3-5. A-FM CARRIER FREQUENCY ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP233 (Lch) TP234 (Rch)	Frequency counter Dummy plug	REC mode Blank tape

Adj. Location	Adj. value
VR233 (L-FO)	1.4 MHz ± 5 kHz
VR234 (R-FO)	1.8 MHz ± 5 kHz

1. Insert the dummy plug into the AUDIO IN 1 terminals (L, R)
2. Adjust VR233 (L-FO) so that in the zero level signal status the frequency at TP233 becomes 1.4 MHz ± 5 kHz.
3. Adjust VR234 (R-FO) so that in the zero level signal status the frequency at TP234 becomes 1.8 MHz ± 5 kHz.

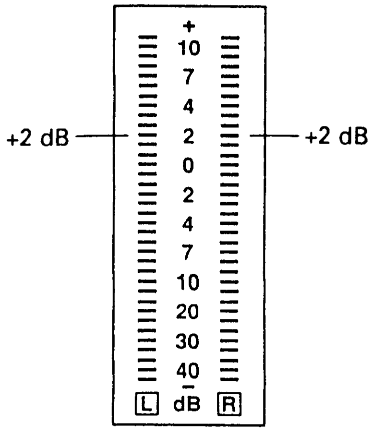
7-3-6. AUDIO LEVEL METER ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
Audio level meter	Standard audio signal generator	E-E mode

Adj. Location	Adj. value
VR721 (L-METER) VR722 (R-METER)	—

1. Select the LEVEL METER switch to the LINER position.
2. Supply a −8 dBs, 1kHz sine wave signal to the AUDIO IN 1 terminals (L, R).
3. Connect the AC voltmeter to the AUDIO OUT terminals (L, R)
4. Press the AUDIO input button on the control panel to the "IN 1" position.
5. Press the COUSOR buttons (▲) or (▼) to the "MENU 1" screen appears.
6. Set the audio recording level; press the COUSOR/ TRACKING button (◄ : left) one time from the center cousor position.
7. Adjust VR721 (L-METER) and VR722 (R-METER) so that the +2dB indicators on the audio level meter light on the both the Lch and R ch, as shown in Fig. 7-3-4.
8. Change the audio recording level; press the COUSOR/ TRACKING button (◄ : left) two times from the center cousor position.
9. Confirm that the +2 dB indicators on the audio level meter goes out on both the Lch and Rch. If the +2 dB indicators still lighting, rotate VR721 (L-METER) and VR722 (R-METER) slightly to adjust it so that the +2 dB indicators goes out.
10. Repeat steps 6 through 9, if necessary.

WNA-LM1



AUDIO LEVEL METER

Fig. 7-3-4

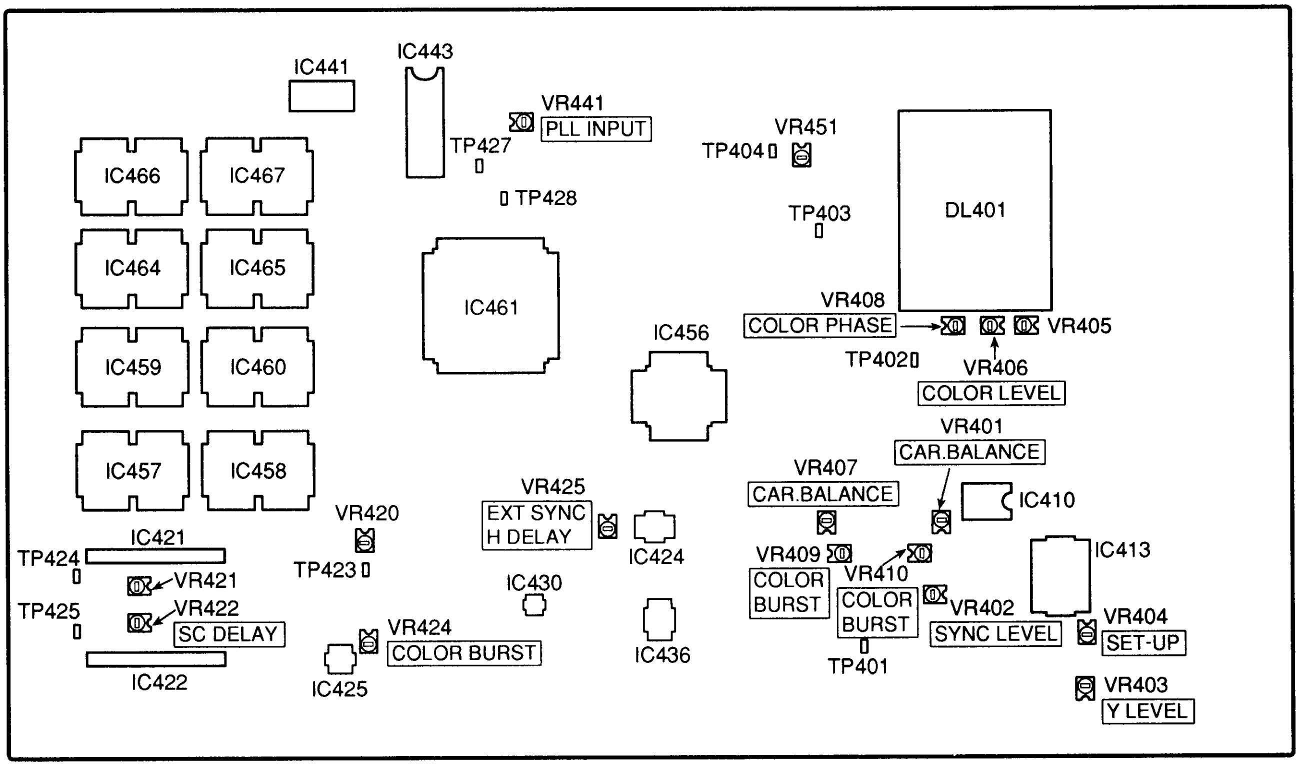
7-4. TBC CIRCUIT ADJUSTMENT

7-4-1. TEST EQUIPMENT AND STANDARDS REQUIRED

Vectorscope	Same performance as the unit for adjusting the 8 mm Camcorder.
Color Bar Signal Generator	Color bar signal with 100% white level (Signal waveform is described before. Refer to Fig. 7-2-1.)
Oscilloscope	Vertical sensitivity : 5 mV/DIV Bandwidth : more than 30 MHz
AC Voltmeter	Effective value indication Input frequency : 10 Hz~20 kHz Input impedance : more than 1 MΩ Measurement level : 1 mV (full scale)
Frequency Counter	Input frequency : 20 Hz~10 MHz

7-4-2. LOCATION OF ADJUSTMENT POINTS

P1B34700B-C1


IC443
IC441
VR441
PLL INPUT
TP427
TP428
VR451
TP404
TP403
DL401
IC466
IC467
IC464
IC465
IC461
IC459
IC460
IC456
VR408
COLOR PHASE
VR405
TP402
VR406
COLOR LEVEL
VR401
CAR.BALANCE
IC457
IC458
VR407
CAR.BALANCE
IC410
VR425
EXT SYNC
H DELAY
VR420
IC421
TP424
TP423
IC424
VR409
VR410
IC413
VR421
IC430
COLOR
BURST
COLOR
BURST
VR402
VR404
TP425
VR422
SC DELAY
VR424
COLOR BURST
SYNC LEVEL
SET-UP
IC436
TP401
IC422
IC425
VR403
Y LEVEL

GVR-P04 (DM-1 PWB (Side-A))

Fig. 7-4-1

Note:

- Set the following switch to the position indicated below, before making following adjustments.

SWITCH	POSITION
VIDEO AGC	ON
TBC	ON
VIDEO INPUT	CONPOSITE
TIME CODE	BOTH

7-4-3. INPUT PLL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP427 TP428	Oscilloscope	Standard setting mode

Adj. Location	Adj. value
VR441 (PLL INPUT)	—

1. As shown in Fig. 7-4-2, adjust the rising edge of the TP427 waveform (B) to the center of the LOW period of the TP428 waveform (A) using VR441.

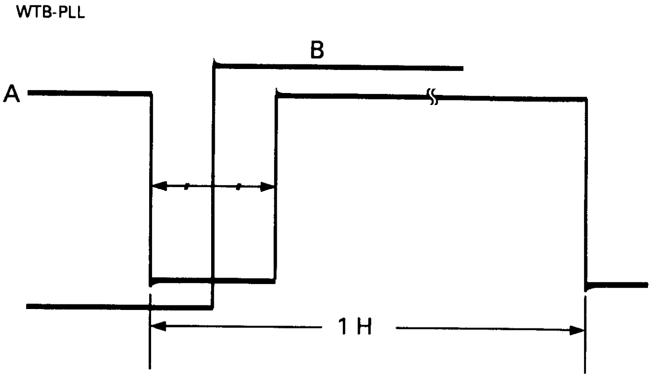


Fig. 7-4-2

7-4-4. COLOR BURST FREQUENCY ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP423	Frequency counter	Standard setting mode

Adj. Location	Adj. value
VR424 (COLOR BURST)	4 433 618 Hz ± 10 Hz

1. Adjust VR424 (COLOR BURST) so that the frequncy counter's reading is 4 433 618 Hz ± 10 Hz.

7-4-5. CARRIER BALANCE ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP402	Vectorscope	Standard setting mode

Adj. Location	Adj. value
VR401 (CAR. BALANCE) VR407 (CAR. BALANCE)	—

1. Set the gain of the vectorscope to maximum.
2. As shown in Fig. 7-4-3, adjust point (A) indicating white to the center on the vectorscope screen using VR401 and VR407.

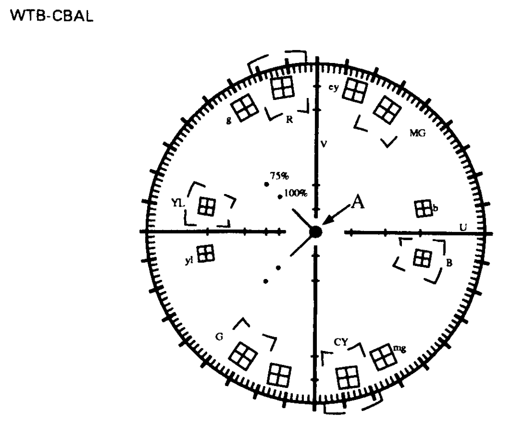


Fig. 7-4-3

7-4-6. SET-UP ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope	Standard setting

Adj. Location	Adj. value
VR404 (SET-UP)	20 ± 10 mV

1. Take out every video input signal cable from the terminals.
2. Adjust VR404 (SET-UP) for the H sync tip level of 20 ± 10 mV as shown in Fig. 7-4-4.

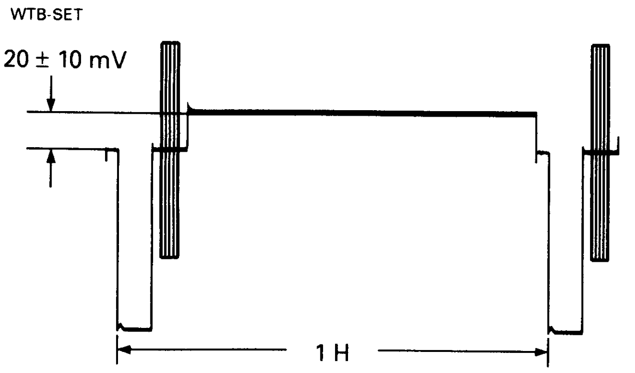


Fig. 7-4-4

7-4-7. SYNC LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope	Standard setting mode

Adj. Location	Adj. value
VR402 (SYNC LEVEL)	300 ± 10 mV

1. Follow the standard set up procedure.
2. Adjust VR402 (SYNC LEVEL) for the H sync tip level of 300 mV ± 10 mV as shown in Fig. 7-4-5.

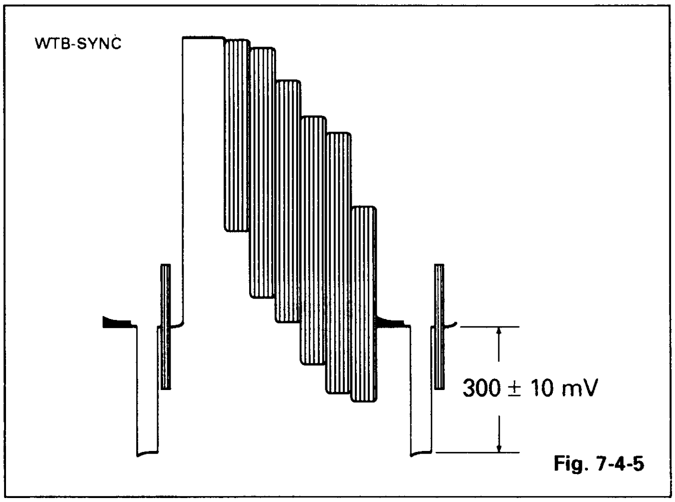


Fig. 7-4-5

7-4-8. Y SIGNAL LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope	Standard setting mode

Adj. Location	Adj. value
VR403 (Y LEVEL)	1 V ± 40 mVp-p

1. Follow the standard set up procedure.
2. Adjust VR403 (Y LEVEL) for the luminance signal level of 1 V ± 40 mVp-p as shown in Fig. 7-4-6.

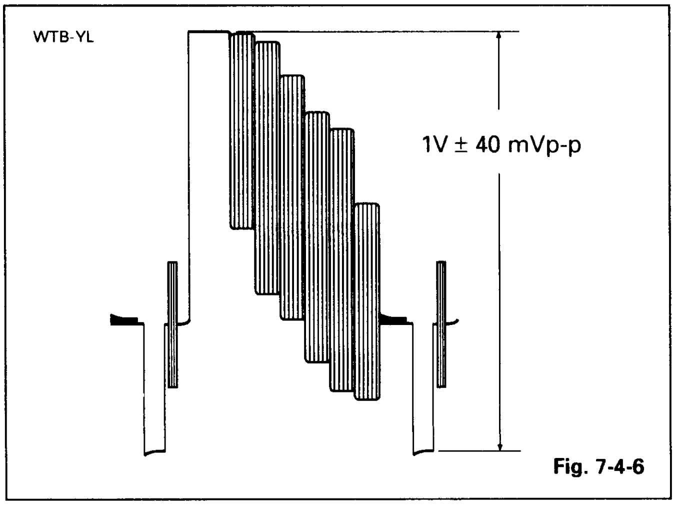


Fig. 7-4-6

7-4-9. COLOR PHASE ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP404	Oscilloscope	Standard setting mode

Adj. Location	Adj. value
VR408 (COLOR PHASE)	—

1. Follow the standard set up procedure.
2. As shown in Fig. 7-4-7, adjust the 1H-next waveform and part A to minimum using VR408.

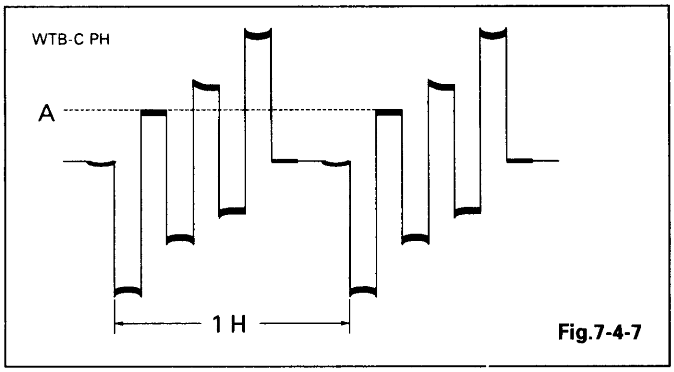


Fig.7-4-7

7-4-10. COLOR LEVEL ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP141 (VIDEO OUT)	Oscilloscope	Standard setting mode

Adj. Location	Adj. value
VR406 (COLOR LEVEL)	620 ± 40 mV

1. Follow the standard set up procedure.
2. Adjust VR403 (Y LEVEL) for the chrominance signal level of 620 ± 40 mVp-p as shown in Fig. 7-4-8.

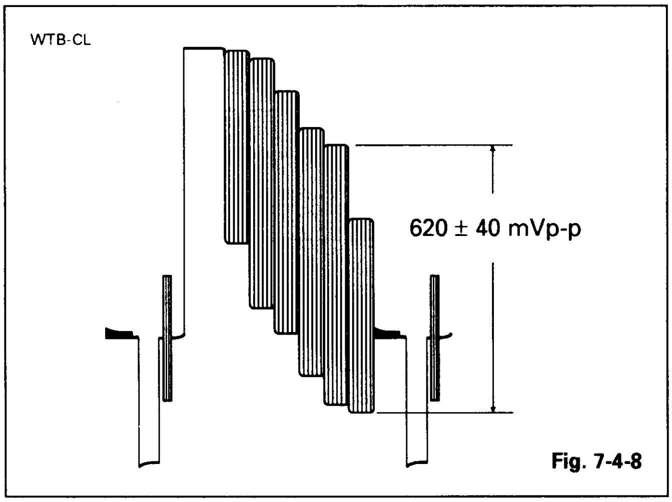


Fig. 7-4-8

7-4-11. COLOR BURST ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP404	Oscilloscope	Standard setting mode

Adj. Location	Adj. value
VR410 (COLOR BURST) VR409 (COLOR BURST)	—

1. Connect the color bar signal to the input of the vectorscope and adjust the gain and phase of the vectorscope so that the point indicating burst is at the 75% displayed.
2. Connect the video output to the input of the vectorscope.
3. As shown in Fig. 7-4-9, adjust the point (A) indicating burst to the 75% displayed using VR409 and VR410.

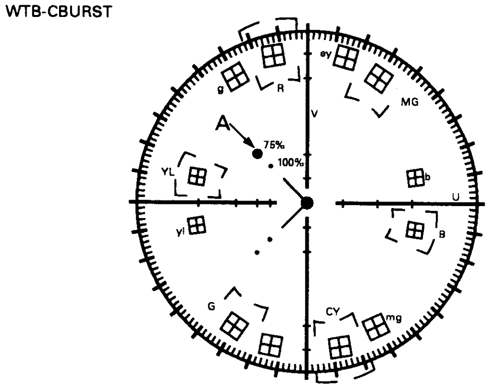


Fig. 7-4-9

7-4-12. EXT SYNC H DELAY ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
EXT SYNC INPUT terminal TP141 (VD OUT)	Oscilloscope	Standard setting mode

Adj. Location	Adj. value
VR425 (EXT SYNC H DELAY)	—

1. Input a color bar signal from a signal generator other than VIDEO INPUT to the EXT SYNC INPUT terminal.
2. Input the EXT SYNC INPUT color bar signal to Ach of the oscilloscope and connect the VIDEO OUTPUT signal to Bch.
3. Synchronize the oscilloscope using Ach.
4. Adjust the rising edge of the SYNC waveform as shown in Fig. 7-4-10 using VR425.

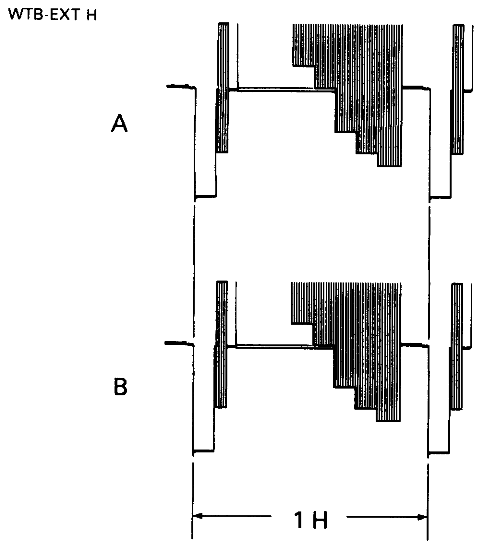


Fig.7-4-10

7-4-13. EXT SYNC SC DELAY ADJ.

Measuring Point	Measuring Equipment	Adj. Condition
TP424 TP425	Oscilloscope Monitor	Standard setting mode

Adj. Location	Adj. value
VR421 (SC DELAY) VR422 (SC DELAY)	—

1. Check that the SC PHASE point is at the center and the S4001 (NORMAL/TEST) is NORMAL as shown in Fig. 7-4-11 (A).
2. Adjust the TP425 waveform level to minimum (below 100 mV) as shown in Fig. 7-4-11 (B) using VR422.
3. Set S4001 to TEST. (Fig. 7-4-11 (C))
4. Adjust the TP424 waveform level to minimum (below 100 mV) as shown in Fig. 7-4-11(B) using VR421.
5. Set S4001 to NORMAL.

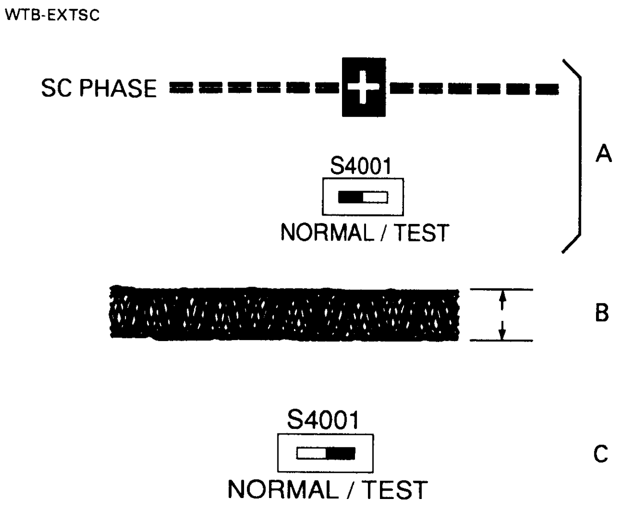
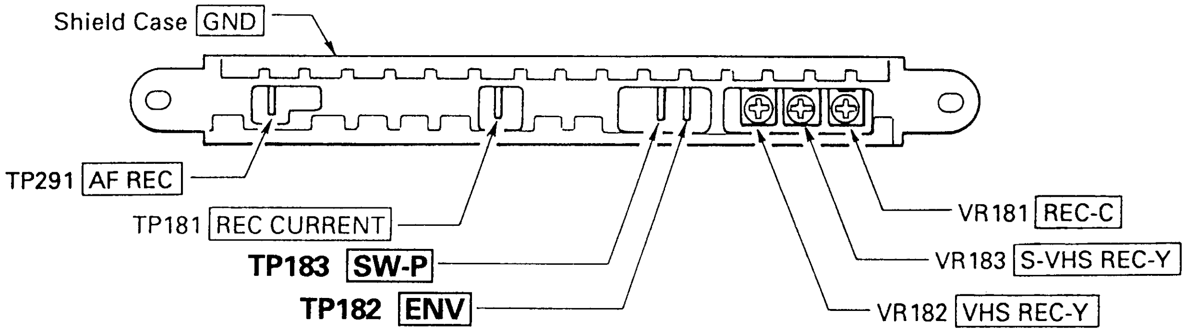


Fig.7-4-11

7-5. TEST POINTS FOR TAPE PATH ADJUSTMENT

Test points TP182 (ENV) and TP183 (SW-P) for tape path adjustment is shown in Figure below.
For adjustment, refer to 6. Mechanism Adjustment.

PIA51101B-T3


Shield Case GND
TP291 AF REC
TP181 REC CURRENT
TP183 SW-P
TP182 ENV
VR181 REC-C
VR183 S-VHS REC-Y
VR182 VHS REC-Y

VP-1 PWB Assembly

Fig. 7-5-1

NOTES

8.PARTS LIST
8-1.PARTS LIST OF GVR-S960

ACCESSORIES

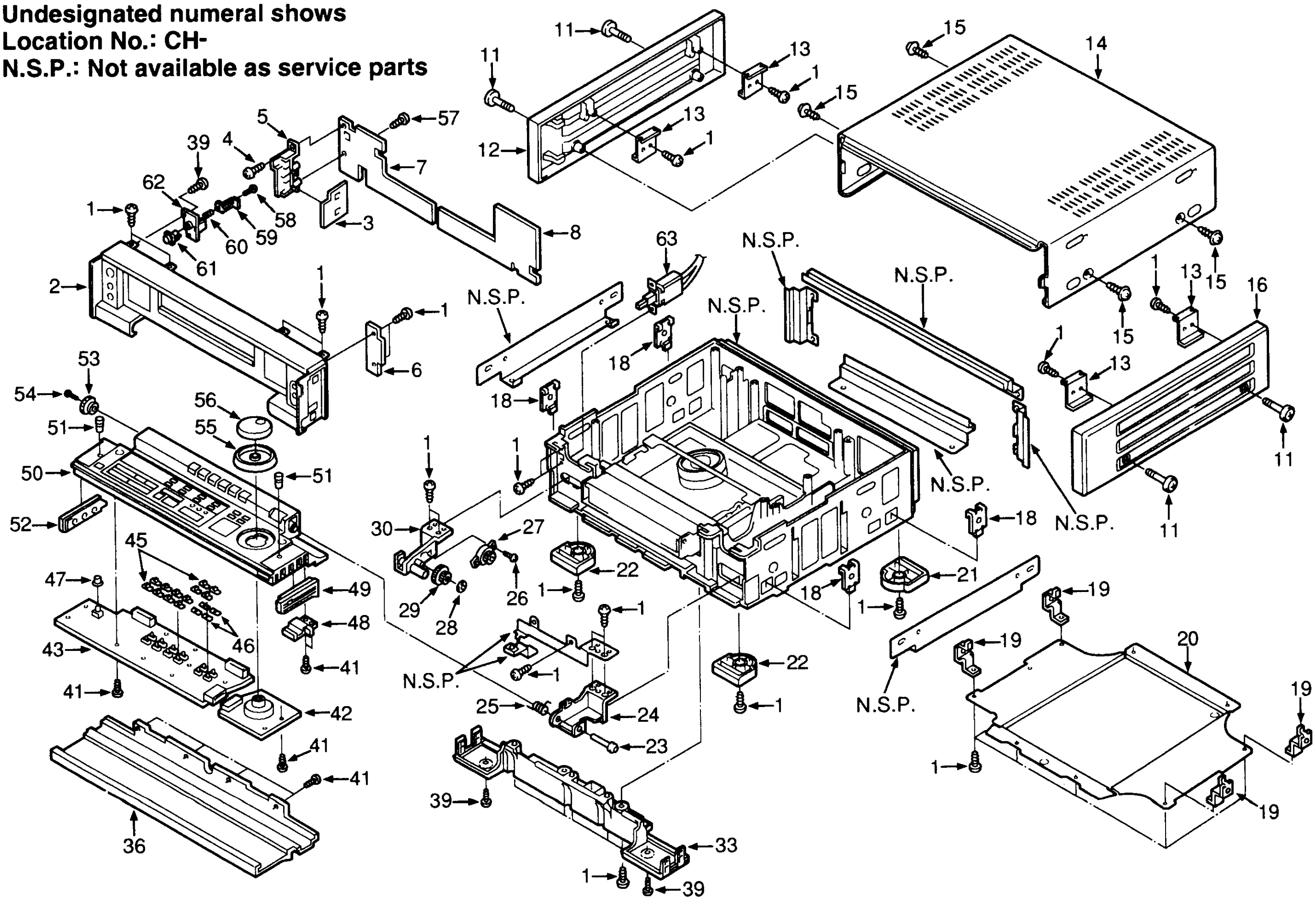
LOCATION	PARTS NO.	DESCRIPTION
	613 162 4719	INSTRUCTION MANVAL,GVR-S960
⚠	645 014 5667	CORD,POWER(EUROPE)
⚠	645 014 5674	CORD,POWER(U.K)
⚠	645 014 5681	CORD,POWER(SWITZERLAND)
⚠	645 014 5698	CORD,POWER(ITALY)

PACKING MATERIALS

LOCATION	PARTS NO.	DESCRIPTION
	613 164 7930	CARTON CASE
	613 101 2646	CUSHION,INNER,FRONT
	613 101 2653	CUSHION,INNER,BACK
	613 139 3745	POLYE COVER,INNER

CABINET & CHASSIS PARTS 1

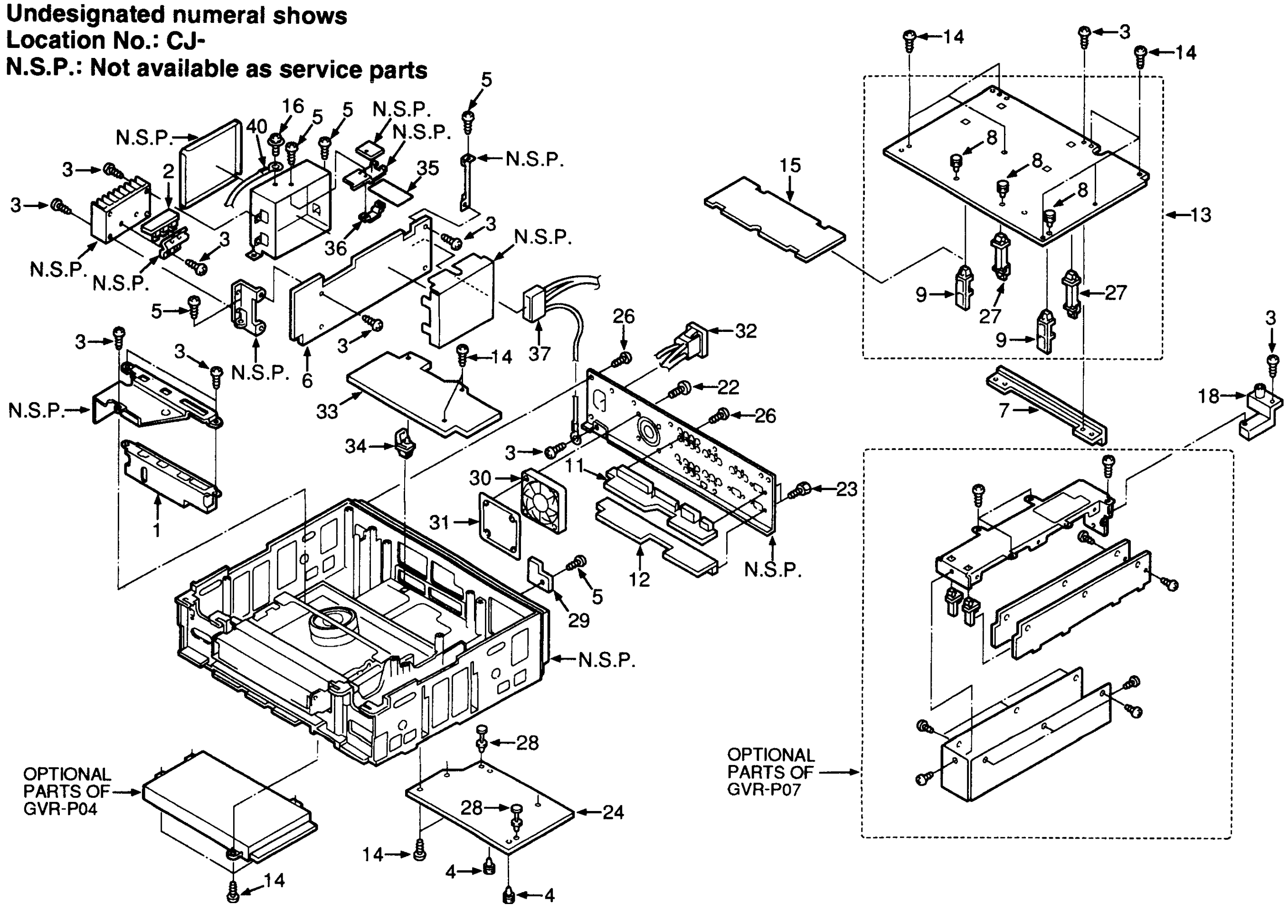
LOCATION	PARTS NO.	DESCRIPTION
CH-1	411 137 0007	SCR L-TPG BIN 3X10
CH-2	613 162 4054	ASSY,CABINET,FRONT
CH-3	613 163 1861	COMPL PWB,TB-3
CH-4	411 021 3503	SCR S-TPG BIN 3X10
CH-5	613 146 7538	HOLDER,JACKMIC
CH-6	613 162 2418	COMPL PWB,TB-4
CH-7	613 162 2401	COMPL PWB,TM-2
CH-8	613 162 2395	COMPL PWB,TM-1
CH-11	412 034 9506	SPECIAL SCREW
CH-12	613 147 0347	PANEL,SIDE,LEFT
CH-13	613 101 2509	BRACKET,PANEL SIDE
CH-14	613 147 0323	COVER,TOP
CH-15	412 024 7604	SPECIAL SCREW
CH-16	613 147 0354	PANEL,SIDE,RICHT
CH-18	613 101 2516	BRACKET,PANEL SIDE
CH-19	613 093 2730	BRACKET
CH-20	613 114 5559	COVER,BOTTOM
CH-21	613 147 0378	STAND,BACK
CH-22	613 146 7491	STAND,FRONT
CH-23	613 101 1267	SHAFT,DOOR
CH-24	613 101 1076	BRACKET,FOR DOOR(RIGHT)
CH-25	613 152 0196	SPRING
CH-26	411 030 7202	SCR BIN 2X6
CH-27	613 059 4792	DAMPER
CH-28	613 102 0238	RING
CH-29	613 101 9508	GEAR
CH-30	613 104 1820	ASSY,BRACKET FOR DOOR(LEFT)
CH-33	613 100 8632	LID
CH-36	613 162 4092	ASSY,DOOR
CH-39	411 021 6405	SCR S-TPG BIN 3X8
CH-41	411 021 3107	SCR S-TPG BIN 2.6X8
CH-42	613 162 2388	COMPL PWB,OP-2
CH-43	613 164 8517	COMPL PWB,OP-1
CH-45	613 147 0491	KNOB,SLIDE SW
CH-46	613 157 2423	HOLDER SW,SLIDE SW COVER
CH-47	613 147 0507	KNOB,VIDEO LEVEL
CH-48	613 147 0545	HOLDER,DOOR,DOOR LOCK UNIT
CH-49	613 147 0576	BLIND,RIGHT
CH-50	613 164 7848	ASSY,DOOR,PANEL
CH-51	613 052 9565	RUBBER CUSHION
CH-52	613 147 0569	BLIND,LEFT
CH-53	613 101 1236	GEAR,LEFT
CH-54	411 022 8606	SCR S-TPG PAN 2X8
CH-55	613 147 0859	KNOB,SHUTTLE DIAL
CH-56	613 108 8948	COMPL,KNOB
CH-57	411 137 0007	SCR L-TPG BIN 3X10
CH-58	411 137 0007	SCR L-TPG BIN 3X10
CH-59	613 163 5272	STOPPER
CH-60	411 025 4308	SCR S-TPG BIN 2X6
CH-61	613 163 4763	BUTTON
CH-62	613 163 4855	HOLDER,
CH-63	645 011 2508	SWITCH,PUSH POWER 2P-1T,POWER


Undesignated numeral shows
Location No.: CH-
N.S.P.: Not available as service parts

CABINET & CHASSIS PARTS 2

LOCATION	PARTS NO.	DESCRIPTION
CJ-1	613 164 4823	COMPL PCB,VP-1
CJ-2	613 162 2326	COMPL PWB,PW-2
CJ-3	411 021 6405	SCR S-TPG BIN 3X8
CJ-4	613 104 2926	HOLEDER,BUHIN
CJ-5	411 137 0007	SCR L-TPG BIN 3X10
CJ-6	613 162 2319	COMPL PWB,PW-1
CJ-7	613 157 1099	HOLDER PWB
CJ-8	613 053 8048	FIXER
CJ-9	613 053 8031	FIXER
CJ-10	613 157 3734	TERMINAL
CJ-11	613 162 2296	COMPL PWB,TB-1
CJ-12	613 162 2302	COMPL PWB,TB-2
CJ-13	613 162 2340	COMPL PWB,VD-1
CJ-14	411 021 3800	SCR S-TPG BIN 3X10
CJ-15	613 162 2333	COMPL PWB,AD-1
CJ-16	411 047 0104	SCR PAN+SW+W 3X8
CJ-18	613 157 1105	HOLDER PWB,VD-1
CJ-22	411 001 9600	SCR BIN 4X 12
CJ-23	645 005 1395	SOCKET,D SUB 9P
CJ-24	613 162 2272	COMPL PWB,SV-1
CJ-27	613 053 8024	FIXER
CJ-26	411 021 3701	SCR S-TPG BIN 3X10
CJ-28	613 053 8055	FIXER
CJ-29	613 164 4830	COMPL,PWB,TB-5
CJ-30	645 005 5119	MOTOR,FAN DC 1.2W
CJ-31	613 159 8621	HOLDER,FAN,
CJ-32	613 137 5055	CONNECTOR,INLET
CJ-33	613 164 8500	COMPL PWB,AD-2
CJ-34	613 133 7084	HOLDER,AD-2
CJ-35	613 165 1753	SPACER,SHEET
CJ-36	613 165 1937	HOLDER,FOR.IC501
CJ-37	613 164 3239	ASSY,WIRE
CJ-40	613 083 8643	CORD,TERMINAL C-5

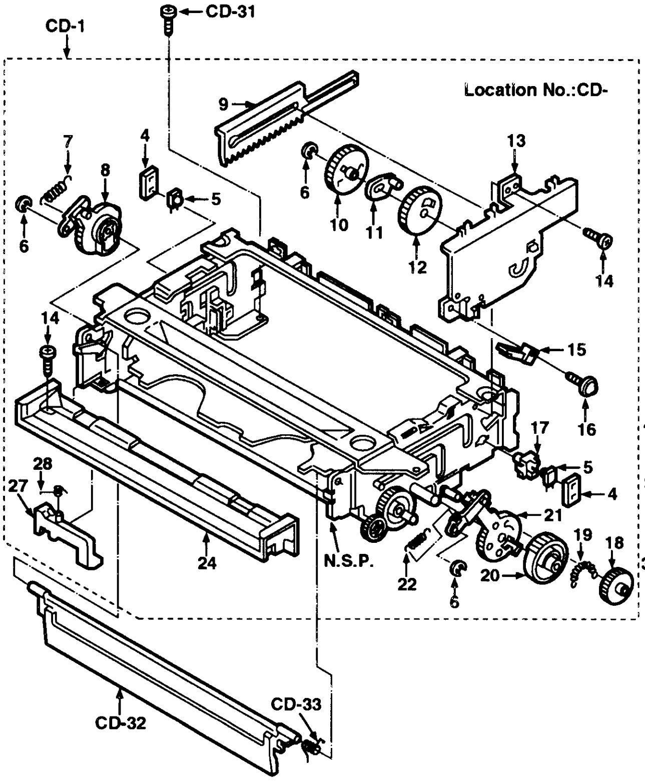
Undesignated numeral shows
Location No.: CJ-
N.S.P.: Not available as service parts


5
16
5
5
N.S.P.
N.S.P.
N.S.P.
40
N.S.P.
3
2
35
3
3
36
3
N.S.P.
N.S.P.
N.S.P.
5
3
3
N.S.P.
6
3
14
37
N.S.P.
33
1
34
26
32
22
26
3
30
11
23
31
12
N.S.P.
5
29
N.S.P.
28
28
24
14
4
4
14
OPTIONAL PARTS OF GVR-P04
15
14
3
14
8
8
8
13
9
27
27
9
7
3
18
OPTIONAL PARTS OF GVR-P07

MECHANISM PARTS

MECHANISM PARTS 1

LOCATION	PARTS NO.	DESCRIPTION
CD-1	613 087 4412	COMPL,CASSETTE MECHA
CD-4	613 022 0585	LID
CD-5	407 098 3201	PHOTO COUPLE PN150SAN
CD-6	411 015 9801	RING E 2.3
CD-7	613 022 1643	SPRING,LINK L
CD-8	613 022 0073	ASSY,GEAR,LEVER L
CD-9	613 022 2695	RACK
CD-10	613 141 6109	GEAR,LOCK
CD-11	613 139 8962	ASSY,LEVER,PINION
CD-12	613 022 2626	GEAR,PINION
CD-13	613 021 9657	ASSY,BRACKET,GEAR
CD-14	411 027 1305	SCR S-TPG BIN 2.6X4
CD-15	613 095 0949	SW,SPECIAL
CD-16	411 106 9208	SCR PAN+SW+W 2X9
CD-17	613 022 0943	HOLDER,TRANSISTOR
CD-18	613 022 2619	GEAR,IDLER
CD-19	613 022 1667	SPRING,GEAR MAIN
CD-20	613 022 2596	GEAR,MAIN
CD-21	613 022 0097	ASSY,GEAR,LEVER R
CD-22	613 022 1674	SPRING,LINK R
CD-24	613 022 4064	BOARD,UNDER
CD-27	613 022 2237	LEVER,SAFETY SW
CD-28	613 022 1827	SPRING,SAFETY SW
CD-31	411 001 8702	SCR BIN 3X6
CD-32	613 148 4221	CASSETTE DOOR
CD-33	613 022 1803	SPRING,DOOR
MA-1	613 102 9239	ASSY,LEVER,TENSION
MA-2	613 105 5698	SPRING,LEVER TENSION
MA-3	613 100 4573	ASSY,HOLDER,BAND
MA-4	411 130 5207	SCR PAN+FLG 2.6X2.4
MA-5	411 109 1605	WASHER Y 2.6X6X0.25
MA-6	613 093 3904	ASSY,REEL,SUPPLY
OR	613 150 2550	ASSY,REEL,SUPPLY
MA-7	613 139 7859	ASSY,REEL,TAKE UP
MA-8	412 021 5306	SPECIAL WASHER 3.1X6X0.3
OR	412 015 8900	SPECIAL WASHER 3.1X6X0.4
OR	412 015 8504	SPECIAL WASHER 3.1X6X0.5
MA-9	411 109 1407	WASHER Y 2.1X5X0.25
OR	411 109 1506	WASHER Y 2.1X6X0.25
MA-10	613 100 4672	ASSY,GEAR,ONE WAY
MA-11	412 026 7305	SPECIAL WASHER 2.6X6X0.25
MA-12	613 103 2644	GEAR,REEL TAKE UP
MA-13	412 041 7205	WASHER 2.6X6X0.13
MA-15	412 042 4302	SPECIAL SCREW 2.6X4
MA-16	613 100 4696	COMPL,IDLER,CLUTCH
MA-17	411 120 1301	WASHER Y 2.1X4X0.25
MA-18	613 100 4689	ASSY,IDLER
MA-19	411 021 3107	SCR S-TPG BIN 2.6X8
MA-20	613 120 9053	COMPL PCB,MC-4
MA-21	407 016 7205	LED LN59
MA-22	613 100 4641	ASSY,SLIDE,ACT PLATE
MA-23	613 142 9086	SLIDE,C BRAKE
MA-24	613 022 1612	SPRING,RETURN SLIDE
MA-25	613 022 1506	SPRING,SUB T
MA-26	613 098 0106	ASSY,BRAKE SUB T
MA-27	613 103 2651	PULLEY,REEL
MA-28	613 022 1490	SPRING,SUB SUPPLY
MA-29	613 022 2374	SLIDE,ACT BRAKE
MA-30	613 084 8871	BRAKE,SUB SUPPLY
MA-31	613 100 4627	ASSY,SLIDE,M PLATE
MA-32	613 080 9216	ASSY,BRAKE,SUPPLY
MA-33	613 022 1544	SPRING,MAIN BRAKE
OR	613 086 2914	SPRING,MAIN BRAKE
MA-34	613 080 9209	ASSY,BRAKE,TAKE UP
MA-35	411 109 3005	WASHER Y 2.6X5X0.5
MA-36	613 022 2015	LEVER,CONT PLATE
MA-37	412 015 9501	SPECIAL WASHER
MA-38	411 021 7907	SCR S-TPG BIN 4X12
MA-39	412 045 4606	SPECIAL WASHER 2.4X6X0.25
MA-40	412 030 2402	SPECIAL SCREW
MA-41	412 015 9600	SPECIAL WASHER
MA-42	613 105 5728	SPRING,LEVER BRAKE
MA-43	613 100 7659	ASSY,LEVER,BRAKE BAND
MA-44	412 028 3008	SPECIAL WASHER 1.6X4X0.4T
MA-45	613 099 7432	LEVER,ONE WAY LOCK
MA-46	411 130 5009	WASHER Y 2.1X8X0.2



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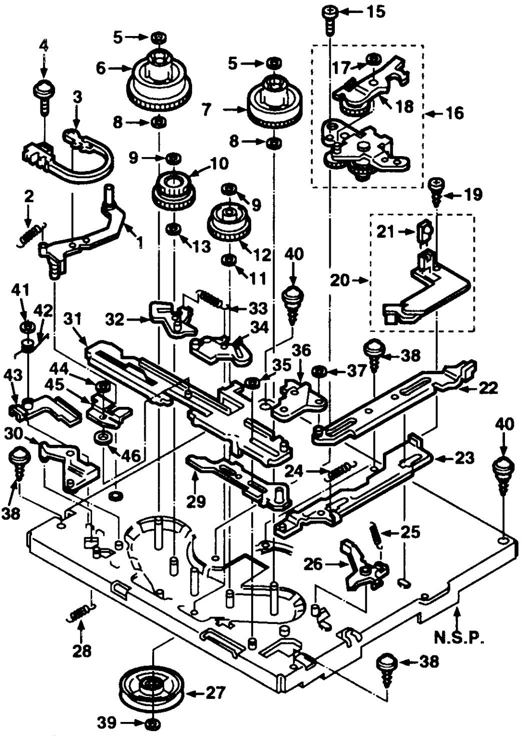

N.S.P.:Not available as service parts

MECHANISM PARTS 1

MECHANISM PARTS 2

LOCATION	PARTS NO.	DESCRIPTION
DR-1	613 162 5846	COMPL,CYLINDER,5H7P-SOB
OR	613 162 5853	COMPL,CYLINDER,5H7P-SOB
DR-2	411 038 1608	SCR PAN+W 3X8
DR-3	613 162 5860	ASSY,CYLINDER,UPR 5H7P-SO
OR	613 162 5877	ASSY,CYLINDER,UPR 5H7P-SO
DR-4	613 112 3250	ASSY,CYLINDER,LWR 7PB
OR	613 112 3267	ASSY,CYLINDER,LWR 7PB
DR-5	613 163 7986	SPACER,MOTOR 0.3T
DR-6	613 121 6556	ASSY,BASE,CYLINDER
DR-7	411 047 7509	SCR PAN+FLG 3X6
DR-8	411 047 5000	SCR PAN+FLG 2.6X8
OR	412 030 9708	SPECIAL SCREW 2.6X8
DR-9	613 132 3520	STATOR,MOTOR CYLINDER
OR	613 150 1881	STATOR,MOTOR CYLINDER
DR-10	411 044 8301	SCR PAN+SW 2.3X10
OR	411 044 9209	SCR PAN+SW 2.3X8
OR	412 036 0709	SPECIAL SCREW 2.3X10
DR-11	613 022 4019	ROTOR,MOTOR CYL
DR-12	411 044 9001	SCR PAN+SW 2.3X6
OR	412 036 0808	SPECIAL SCREW 2.3X6
DR-13	613 094 4634	BRACKET,IMPEDANCE
DR-14	411 089 6003	WASHER Y1.6X3.2X0.25
DR-15	613 094 4764	ROLLER,IMPEDANCE
MB-1	613 123 4802	SLEEVE
MB-2	613 053 3227	SPECIAL WASHER
MB-3	613 123 4970	TAPE GUIDE
MB-4	411 004 5302	NUT HEX (3)
MB-5	613 123 9418	CAP
MB-6	613 021 9961	ASSY,SLIDE,ACT PINCH
MB-7	613 021 9800	ASSY,LEVER,CAM PINCH
MB-8	411 109 2008	WASHER Y 3.1X8X0.5
MB-9	613 022 1797	SPRING,ACE HEAD
MB-10	613 147 1757	COMPL,MOUNTING,HEAD
MB-11	613 110 1692	SLEEVE,ACE HEAD
MB-12	412 015 8207	SPECIAL NUT (M5)
MB-13	411 120 0007	SCR PAN+SW+W 2.6X5
MB-14	613 120 3631	BRACKET,STOPPER
MB-15	613 105 5711	SPRING,SLIDE BRAKE
MB-16	613 100 4610	COMPL,SLIDE,CAM
MB-17	613 022 1575	SPRING,LINK LOCK
MB-18	613 022 2725	DAMPER
MB-19	613 022 2534	GEAR,FRONT LOAD
MB-20	613 094 1206	ASSY,LEVER,FRONT
MB-21	613 134 2910	GEAR,HELICAL FRONT
MB-22	411 046 8002	SCR PAN+SW+W 2.6X6
MB-23	411 023 2801	SCR S-TPG PAN 2.6X6
MB-24	411 021 3107	SCR S-TPG BIN 2.6X8
OR	411 023 3303	SCR S-TPG PAN 2.6X8
MB-26	613 089 4328	ASSY,SENSOR,DEW
MB-28	613 077 3227	HOLDER,WORM
MB-29	613 027 0382	WASHER
MB-30	613 078 8320	ASSY,WORM,FRONT
MB-31	613 117 0599	BRACKET,HOLDER
MB-32	613 093 9159	PLATE,NUT
MB-33	613 093 8374	DAMPER,MOTOR
MB-34	613 077 3616	DAMPER,WORM
MB-35	613 121 9960	ASSY,LOADING MOTOR
MB-36	613 092 9945	DAMPER,MOTOR
MB-37	613 107 2732	COMPL PCB,MC-3(N.S.P.)
MB-39	613 110 0374	ROTARY SWITCH
MB-40	411 126 5303	SCR PAN 2.6X13
MB-41	613 092 9921	ASSY,SLIDE,FRONT
MB-42	613 092 5985	SPRING,LEVER LOAD
MB-43	613 092 5992	SPRING,LEVER ACT
MB-44	613 092 5886	HOLDER,WORM
OR	613 138 8628	HOLDER,WORM
MB-45	613 027 0627	WASHER 2.1X6X0.5
MB-46	613 092 9938	ASSY,WORM,LOAD
MB-47	613 022 2985	BELT,LOADING
MB-48	412 033 4106	WASHER SLIT 2.6X5X0.50
MB-49	613 077 3579	GEAR,HELICAL
MB-50	613 102 9293	ASSY,LEVER,REV GUIDE
MB-51	613 022 1568	SPRING,REVIEW LEVER
MB-52	613 022 0158	COMPL,PINCH ROLLER
MB-53	613 022 1483	SPRING,PINCH ROLLER
MB-54	411 109 2107	WASHER Y 3.6X6X0.5
MB-55	613 078 8160	COMPL,LEVER,ACT BRAKE
MB-56	411 031 1209	SCR BIN 2.6X5
MB-57	613 022 1919	PLATE,GUIDE
MB-58	613 108 2953	ASSY,BASE,ROLLER S
MB-59	613 021 9732	ASSY,BASE,ROLLER T
MB-60	411 063 0904	SCR SET HEX-SCT 2X3
MB-61	613 022 0233	ASSY,GUIDE,ROLLER
MB-62	412 033 3208	WASHER SLIT 1.6X4X0.25
MB-63	613 086 7452	HEAD,FULL ERASE
MB-64	613 095 3759	ROLLER,IMPEDANCE
MB-66	613 153 1871	LEVER,FE HEAD
MB-67	613 022 1698	SPRING,ERASE HEAD
MB-69	613 095 3735	BRACKET,IMPEDANCE
MB-80	411 167 2705	WASHER Y 2.6X4.1X0.5
MB-81	613 119 8562	ASSY,ROLLER,CLEANER
MB-82	613 143 1881	ASSY,LEVER,CLEANER
MB-83	613 119 8593	SPRING
MB-84	613 142 9055	BRACKET,CLEANER

MECHANISM PARTS 3

LOCATION	PARTS NO.	DESCRIPTION
MC-1	613 130 9425	MOTOR,CAPSTAN
MC-2	613 093 4031	BELT,REEL DRIVE
MC-3	613 135 4609	COMPL,LEVER,CLUTCH
MC-6	613 022 1520	SPRING,LEVER CLUTCH
MC-7	613 082 3434	LEVER,CHANGE CLUTCH
MC-8	613 022 1711	SPRING,CHANGE CLUTCH
MC-9	613 081 7518	ASSY,BRAKE,CAPSTAN
MC-10	613 098 2285	SPRING,CAPSTAN
MC-12	411 021 3107	SCR S-TPG BIN 2.6X8
MC-13	411 109 2008	WASHER Y 3.1X8X0.5
MC-14	613 142 9093	SLIDE,CAM PLATE
MC-15	613 099 7555	CAM,MODE
MC-16	411 109 1902	WASHER Y 3.1X6X0.5
MC-17	613 138 4644	CAM,MAIN
MC-18	613 022 2644	RACK,LOAD
MC-19	411 109 1803	WASHER Y 2.6X6X0.5
MC-20	411 109 2107	WASHER,3.6X6X0.5
OR	411 109 2206	WASHER,3.6X8X0.5
MC-21	613 021 9794	ASSY,LEVER,CAM LOAD
MC-22	411 047 6809	SCR PAN+FLG 3X4
MC-23	613 021 9763	ASSY,EARTH,CYL
MC-24	613 022 2435	GEAR,LOAD TAKE UP
OR	613 090 6380	GEAR,LOAD TAKE UP
MC-25	613 022 1551	SPRING,GEAR LOAD T
MC-26	613 021 9879	ASSY,LEVER,LOAD T
MC-27	613 090 6373	GEAR,LOAD S
MC-28	613 022 1704	SPRING,GEAR LOAD S
MC-29	613 021 9862	ASSY,LEVER,LOAD S
MC-30	613 099 7418	LEVER,RETURN TENSION
MC-31	613 091 3104	ASSY,LEVER CONTROL
MC-32	411 087 6005	WASHER V 2.6X7.5X0.5
MC-33	411 022 8903	SCR S-TPG PAN 2.3X12
MC-34	411 040 2303	SCR PAN 2.6X5
MC-35	412 015 8603	SPECIAL WASHER 3.1X6X0.25
MC-36	613 100 4665	ASSY,GEAR,FRICTION
MC-37	412 045 4606	SPECIAL WASHER 2.4X6X0.25
MC-38	613 105 5704	SPRING,REVERSE TENSION
MC-39	613 103 2538	BRACKET,PULLEY
MC-40	411 100 0300	SCR S-TPG BIN 2.6X5
MC-41	613 149 9744	COMPL PWB,MC-1(N.S.P.)
MC-42	613 079 8282	SW,PUSH S-VHS
MC-43	411 046 7906	SCR PAN+SW+W 2.6X5

EXPLODED VIEW OF MECHANISM PARTS 2

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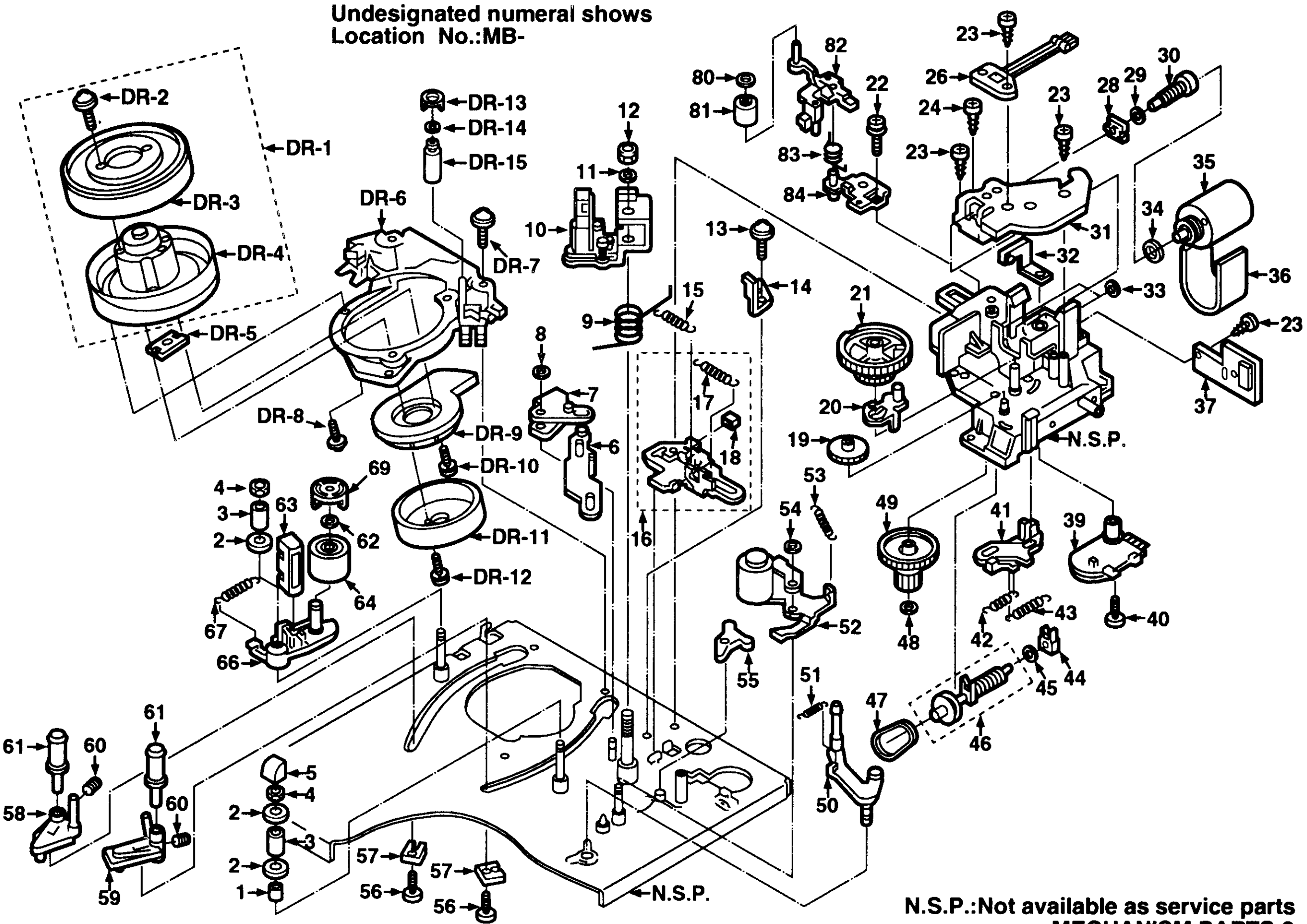

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N.S.P.:Not available as service parts
MECHANISM PARTS 2

93HN4/MB-1

EXPLODED VIEW OF MECHANISM PARTS 3

Undesignated numeral shows
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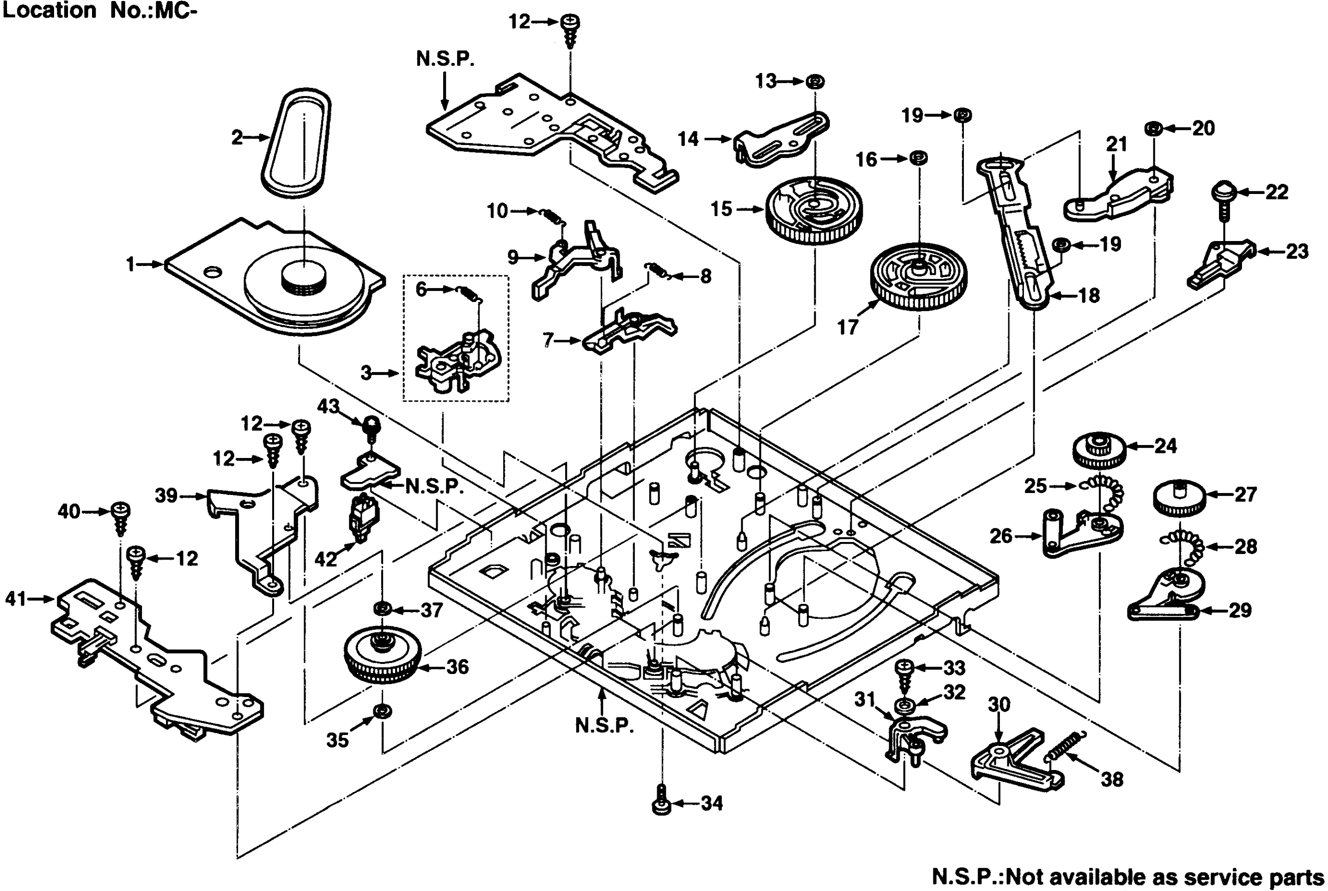

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N.S.P.:Not available as service parts
MECHANISM PARTS 3

93HN4/MC-1

ELECTRICAL PARTS

NOTE-2

NOTE;

1. Materials of Capacitors and Resistors are abbreviated as follows;

Resistors

MT-FILM..............Metallized Film Resistor
MT-GLAZE ....Metallized Glaze Resistor
OXIDE-MT...........Oxide Metallized film Resistor

Capacitors

MT-POLYEST ....Metallized Polyester capacitor
MT-COMPO..........Metallized Composite capacitor
TA-SOLID............Tantalum Solid Capacitor
AL-SOLID ....Aluminium Solid Capacitor
NP-ELECT ....Non-Polarized Electrolytic Capacitor
OS-SOLID............Aluminum Solid Capacitors with Organic Semiconductive Electorlytic Capacitor
DL-ELECT............Double Layered Electrolytic Capacitor

2. Tolerance of Capacitor(10pF over) and Resistor are noted with follow symboles.

F...............±1%　G ....±2%　J...............±5%　K ....±10%
M..............±20%　N ....±30%　Z...............+80%~-20%

3. Capacitors

U:μF　P:pF

4. Inductors

UH:μH　MH:mH

5. N.S.P.;Not available as servise parts.

COMPL PWB,OP-1

COMPLNO.613 164 8517

LOCATION	PARTS NO.	DESCRIPTION
(SEMICONDUCTORS)		
Q8801	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
(DIODES)		
D8801	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D8802	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D8803	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D8804	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D8805	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D8806	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D8807	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D8808	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
(VARIABLE RESISTOR)		
VR881	645 011 4038	VR,ROTARY 3KB
(CAPACITORS)		
C8801	403 001 1906	CERAMIC 0.01U M 16V
(RESISTORS)		
R8801	401 016 3700	CARBON 2.2K JA 1/4W
R8802	401 012 5609	CARBON 1K JA 1/4W
R8803	401 022 0700	CARBON 68 JA 1/4W
R8804	401 012 5609	CARBON 1K JA 1/4W
R8805	401 016 3700	CARBON 2.2K JA 1/4W
(SWITCHES)		
S8801	613 097 9667	SW,SLIDE 2-3,SYNC SEL
S8802	613 097 9674	SW,SLIDE 2-2-NS,HIFI ON/OFF
S8803	613 097 9667	SW,SLIDE 2-3,FRAME SERVO
S8804	613 097 9674	SW,SLIDE 2-2-NS,CONTROL
S8805	613 097 9674	SW,SLIDE 2-2-NS
S8806	613 097 9674	SW,SLIDE 2-2-NS
S8807	613 097 9674	SW,SLIDE 2-2-NS,VIDEO S/BNC
S8808	613 097 9667	SW,SLIDE 2-3,TIME CODE
S8809	613 097 9667	SW,SLIDE 2-3,LINEAR HIFI
S8810	613 097 9674	SW,SLIDE 2-2-NS,VIDEO AGC
S8811	613 097 9667	SW,SLIDE 2-3,LEVEL METER
S8812	613 097 9667	SW,SLIDE 2-3,MONITOR OUT
S8813	613 006 3861	PUSH SWITCH,REW
OR	645 002 4870	SWITCH,PUSH 1P-1T,REW
S8814	613 006 3861	PUSH SWITCH,PLAY
OR	645 002 4870	SWITCH,PUSH 1P-1T,PLAY
S8815	613 006 3861	PUSH SWITCH,REC
OR	645 002 4870	SWITCH,PUSH 1P-1T,REC
S8816	613 006 3861	PUSH SWITCH,EJECT
OR	645 002 4870	SWITCH,PUSH 1P-1T,EJECT
S8817	613 006 3861	PUSH SWITCH,FF
OR	645 002 4870	SWITCH,PUSH 1P-1T,FF
S8818	613 006 3861	PUSH SWITCH,STOP
OR	645 002 4870	SWITCH,PUSH 1P-1T,STOP
S8819	613 006 3861	PUSH SWITCH,PAUSE
OR	645 002 4870	SWITCH,PUSH 1P-1T,PAUSE
S8822	613 006 3861	PUSH SWITCH,TRK+
OR	645 002 4870	SWITCH,PUSH 1P-1T,TRK+
S8823	613 006 3861	PUSH SWITCH,TRK-
OR	645 002 4870	SWITCH,PUSH 1P-1T,TRK-
S8824	645 006 2797	SWITCH,PUSH 1P-1T,FREEZE
OR	645 008 8049	SWITCH,PUSH 1P-1T,FREEZE
OR	645 011 5165	SWITCH,PUSH 1P-1T,FREEZE
OR	645 011 5172	SWITCH,PUSH 1P-1T,FREEZE
S8825	613 006 3861	PUSH SWITCH,CURSOR+
OR	645 002 4870	SWITCH,PUSH 1P-1T,CURSOR+
S8826	613 006 3861	PUSH SWITCH,RESET
OR	645 002 4870	SWITCH,PUSH 1P-1T,RESET
S8827	613 006 3861	PUSH SWITCH,MEMORY
OR	645 002 4870	SWITCH,PUSH 1P-1T,MEMORY
S8828	613 006 3861	PUSH SWITCH,VD IN1/IN2
OR	645 002 4870	SWITCH,PUSH 1P-1T,VD IN1/IN2
S8829	613 006 3861	PUSH SWITCH,AD IN1/IN2
OR	645 002 4870	SWITCH,PUSH 1P-1T,AD IN1/IN2
S8830	645 006 2797	SWITCH,PUSH 1P-1T,AUDIO 1
OR	645 008 8049	SWITCH,PUSH 1P-1T,AUDIO 1
OR	645 011 5165	SWITCH,PUSH 1P-1T,AUDIO 1
OR	645 011 5172	SWITCH,PUSH 1P-1T,AUDIO 1
S8831	645 006 2797	SWITCH,PUSH 1P-1T,AUDIO 2
OR	645 008 8049	SWITCH,PUSH 1P-1T,AUDIO 2
OR	645 011 5165	SWITCH,PUSH 1P-1T,AUDIO 2
OR	645 011 5172	SWITCH,PUSH 1P-1T,AUDIO 2
S8832	645 006 2797	SWITCH,PUSH 1P-1T,VD/HIFI
OR	645 008 8049	SWITCH,PUSH 1P-1T,VD/HIFI
OR	645 011 5165	SWITCH,PUSH 1P-1T,VD/HIFI
OR	645 011 5172	SWITCH,PUSH 1P-1T,VD/HIFI
S8833	613 006 3861	PUSH SWITCH,CURSOR-
OR	645 002 4870	SWITCH,PUSH 1P-1T,CURSOR-
S8834	613 006 3861	PUSH SWITCH,EE MONITOR
OR	645 002 4870	SWITCH,PUSH 1P-1T,EE MONITOR
S8835	613 006 3861	PUSH SWITCH,MARK IN
OR	645 002 4870	SWITCH,PUSH 1P-1T,MARK IN
S8836	613 006 3861	PUSH SWITCH,MARK OUT
OR	645 002 4870	SWITCH,PUSH 1P-1T,MARK OUT
S8837	613 006 3861	PUSH SWITCH,EDIT
OR	645 002 4870	SWITCH,PUSH 1P-1T,EDIT

LOCATION	PARTS NO.	DESCRIPTION
S8838	613 006 3861	PUSH SWITCH,LTC CLR
OR	645 002 4870	SWITCH,PUSH 1P-1T,LTC CLR
S8839	645 006 2797	SWITCH,PUSH 1P-1T,LTC/CTL
OR	645 008 8049	SWITCH,PUSH 1P-1T,LTC/CTL
OR	645 011 5165	SWITCH,PUSH 1P-1T,LTC/CTL
OR	645 011 5172	SWITCH,PUSH 1P-1T,LTC/CTL
S8840	645 006 2797	SWITCH,PUSH 1P-1T,S-VHS
OR	645 008 8049	SWITCH,PUSH 1P-1T,S-VHS
OR	645 011 5165	SWITCH,PUSH 1P-1T,S-VHS
OR	645 011 5172	SWITCH,PUSH 1P-1T,S-VHS

COMPL PWB,OP-2

COMPLNO.613 162 2388

(SWITCHES)

S8901	613 006 3861	PUSH SWITCH,JOG/SHUTTLE
OR	645 002 4870	SWITCH,PUSH 1P-1T,JOG/SHUTTLE

(MISCELLANEOUS)

JG891	613 100 8168	SW,ROTARY JOG SHUTTLE

COMPL PWB,TM-1

COMPLNO.613 162 2395

(INTEGRATED CIRCUITS)

IC711	410 243 7306	IC M38112E4-002SP
IC712	409 243 4101	IC MN1380-L
IC714	409 345 4306	IC M62354P
IC715	410 177 3801	IC AT24C01A-10PC
OR	409 348 3702	IC XL24C01AP
OR	410 172 6708	IC X24C01AP-C7284
OR	410 189 5602	IC 24LC01B/P

(DIODES)

D7101	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7102	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7103	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7104	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7105	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7106	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7107	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7108	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7109	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7110	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7111	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7112	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7113	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133

(CRYSTAL DEVICES)

X7101	645 006 1752	OSC,CERAMIC 4.000MHZ
OR	645 006 3435	OSC,CERAMIC 4.000MHZ
OR	613 111 0793	RESONATOR,CERAMIC 4.0MHZ
OR	613 124 2142	RESONATOR,CERAMIC 4MHZ
X7102	613 109 0972	OSC,CRYSTAL 32KHZ

(CAPACITORS)

C7101	403 189 2405	ELECT	10U	M	16V
C7102	403 121 9509	CERAMIC	0.1U	Z	50V
C7103	403 017 0207	CERAMIC	20P	J	50V
C7104	403 017 0207	CERAMIC	20P	J	50V
C7105	403 001 1906	CERAMIC	0.01U	M	16V
C7106	403 121 9509	CERAMIC	0.1U	Z	50V
C7107	403 150 6500	ELECT	22U	M	16V
C7108	403 193 8905	ELECT	22U	M	50V
C7109	403 121 9509	CERAMIC	0.1U	Z	50V
C7110	403 073 7004	CERAMIC	470P	K	50V
C7111	403 189 2405	ELECT	10U	M	16V
C7112	403 121 9509	CERAMIC	0.1U	Z	50V
C7114	403 121 9509	CERAMIC	0.1U	Z	50V
C7115	403 069 1207	CERAMIC	1000P	K	50V
C7116	403 069 1207	CERAMIC	1000P	K	50V

(RESISTORS)

R7101	401 012 5609	CARBON	1K	JA	1/4W
R7102	401 014 4006	CARBON	1.5K	JA	1/4W
R7103	401 018 5702	CARBON	330K	JA	1/4W
R7104	401 110 6201	CARBON	10M	JA	1/4W
R7105	401 012 6903	CARBON	10K	JA	1/4W
R7106	401 012 6903	CARBON	10K	JA	1/4W
R7107	401 012 6903	CARBON	10K	JA	1/4W
R7108	401 012 6903	CARBON	10K	JA	1/4W
R7109	401 020 7800	CARBON	510	JA	1/4W
R7110	401 012 6903	CARBON	10K	JA	1/4W
R7111	401 012 6903	CARBON	10K	JA	1/4W
R7112	401 012 6903	CARBON	10K	JA	1/4W
R7113	401 012 6903	CARBON	10K	JA	1/4W
R7114	401 012 6903	CARBON	10K	JA	1/4W
R7115	401 012 6903	CARBON	10K	JA	1/4W
R7117	401 012 6903	CARBON	10K	JA	1/4W
R7118	401 012 6903	CARBON	10K	JA	1/4W
R7119	401 012 6903	CARBON	10K	JA	1/4W
R7120	401 012 6903	CARBON	10K	JA	1/4W
R7121	401 012 5609	CARBON	1K	JA	1/4W
R7122	401 012 5609	CARBON	1K	JA	1/4W
R7123	401 012 5609	CARBON	1K	JA	1/4W
R7124	401 012 5609	CARBON	1K	JA	1/4W
R7125	401 012 6903	CARBON	10K	JA	1/4W
R7126	401 012 6903	CARBON	10K	JA	1/4W
R7127	401 012 6903	CARBON	10K	JA	1/4W
R7128	401 012 6903	CARBON	10K	JA	1/4W
R7129	401 012 6903	CARBON	10K	JA	1/4W

(DISPLAY)

A7101	645 002 4696	FLUORESCENT TUBE

(MISCELLANEOUS)

	613 092 7088	HOLDER,DISPLAY-HOLDER
	613 083 5888	HOLDER,LED D5-HCE

COMPL PWB,TM-2

COMPLNO.613 162 2401

(SEMICONDUCTORS)

Q7202	405 063 9104	TR DTA144EL
Q7203	405 063 9104	TR DTA144EL
Q7204	405 011 8500	TR 2SC1740S-R
OR	405 011 8609	TR 2SC1740S-S

(INTEGRATED CIRCUITS)

IC721	409 169 4704	IC BA6810S
IC722	409 039 7903	IC NJM4558S
IC723	409 039 7903	IC NJM4558S

(DIODES)

D7211	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7212	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7213	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D7214	407 155 1300	LED SEL1210R-D
D7215	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133

LOCATION	PARTS NO.	DESCRIPTION			
D7216	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
(VARIABLE RESISTORS)					
VR721	645 002 0919	VR,SEMI 10K N			
OR	645 001 8770	VR,SEMI,10K N			
OR	645 003 5197	VR,SEMI,10K N			
OR	645 003 5531	VR,SEMI,10K N			
VR722	645 002 0919	VR,SEMI 10K N			
OR	645 001 8770	VR,SEMI,10K N			
OR	645 003 5197	VR,SEMI,10K N			
OR	645 003 5531	VR,SEMI,10K N			
VR723	645 002 0902	VR,SEMI 1K N			
OR	645 003 5180	VR,SEMI,1K N			
OR	645 003 5494	VR,SEMI,1K N			
OR	645 003 5524	VR,SEMI,1K N			
(INDUCTORS)					
L7201	645 001 4550	INDUCTOR 10U K			
OR	645 003 7900	INDUCTOR,10U K			
L7202	645 001 4550	INDUCTOR 10U K			
OR	645 003 7900	INDUCTOR,10U K			
(CAPACITORS)					
C7203	403 139 3100	ELECT	4.7U	M	50V
C7204	403 139 3100	ELECT	4.7U	M	50V
C7206	403 001 1906	CERAMIC	0.01U	M	16V
C7208	403 139 1502	ELECT	10U	M	16V
C7209	403 139 1502	ELECT	10U	M	16V
C7210	403 213 7802	CERAMIC	100P	K	50V
C7211	403 213 7802	CERAMIC	100P	K	50V
C7212	403 121 9509	CERAMIC	0.1U	Z	50V
C7214	403 069 1207	CERAMIC	1000P	K	50V
C7215	403 069 1207	CERAMIC	1000P	K	50V
C7216	403 193 7601	ELECT	220U	M	6.3V
C7263	403 139 1502	ELECT	10U	M	16V
C7264	403 139 1809	ELECT	47U	M	16V
C7265	403 139 1502	ELECT	10U	M	16V
C7266	403 139 1809	ELECT	47U	M	16V
C7267	403 139 1502	ELECT	10U	M	16V
C7268	403 139 1502	ELECT	10U	M	16V
C7271	403 069 0309	CERAMIC	1000P	J	50V
C7272	403 069 0309	CERAMIC	1000P	J	50V
C7273	403 069 0309	CERAMIC	1000P	J	50V
(RESISTOR PACKS)					
RB721	645 003 6316	R-NETWORK 100KX8 1/8W			
RB722	645 002 2128	R-NETWORK 100KX7 1/8W			
(RESISTORS)					
R7201	401 015 2605	CARBON	1.8K	JA	1/4W
R7202	401 020 1907	CARBON	4.7K	JA	1/4W
R7204	401 016 3700	CARBON	2.2K	JA	1/4W
R7205	401 020 2805	CARBON	47K	JA	1/4W
R7206	401 020 2805	CARBON	47K	JA	1/4W
R7207	401 022 7105	CARBON	750	JA	1/4W
R7208	401 020 2805	CARBON	47K	JA	1/4W
R7210	401 015 6405	CARBON	2.2	JA	1/4W
R7211	401 012 5609	CARBON	1K	JA	1/4W
R7212	401 012 5609	CARBON	1K	JA	1/4W
R7223	401 012 6903	CARBON	10K	JA	1/4W
R7224	401 012 6903	CARBON	10K	JA	1/4W
R7232	401 012 5609	CARBON	1K	JA	1/4W
R7276	401 012 6903	CARBON	10K	JA	1/4W
R7277	401 012 6903	CARBON	10K	JA	1/4W
R7278	401 015 4609	CARBON	180K	JA	1/4W
R7279	401 012 5609	CARBON	1K	JA	1/4W
R7280	401 012 8006	CARBON	100K	JA	1/4W
R7281	401 015 4609	CARBON	180K	JA	1/4W
R7282	401 012 8006	CARBON	100K	JA	1/4W
R7283	401 012 6903	CARBON	10K	JA	1/4W
R7287	401 012 5609	CARBON	1K	JA	1/4W
R7288	401 016 4707	CARBON	22K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R7289	401 021 8103	CARBON	620	JA	1/4W
R7290	401 012 6903	CARBON	10K	JA	1/4W
R7291	401 023 2703	CARBON	8.2K	JA	1/4W
R7292	401 017 2702	CARBON	27K	JA	1/4W
R7293	401 012 8006	CARBON	100K	JA	1/4W
R7294	401 012 6903	CARBON	10K	JA	1/4W
R7295	401 022 4005	CARBON	68K	JA	1/4W
R7296	401 012 6903	CARBON	10K	JA	1/4W
R7297	401 022 4005	CARBON	68K	JA	1/4W
R7298	401 012 8006	CARBON	100K	JA	1/4W
R7299	401 017 2702	CARBON	27K	JA	1/4W
(DISPLAY)					
A7201	613 100 7352	FLUORESCENT TUBE			
(MISCELLANEOUS)					
	645 008 8070	FIXER			
	613 146 7538	HOLDER,JACKMIC			
	613 083 5888	HOLDER,LED D5-HCE			
	613 092 7095	HOLDER,LEVEL-METER			

COMPL PWB,TB-3

COMPLNO.613 163 1861

(INDUCTORS)					
L8101	645 006 4326	INDUCTOR,2.7U K			
OR	645 010 6774	INDUCTOR,2.7U M			
(RESISTORS)					
R8101	401 012 6903	CARBON	10K	JA	1/4W
R8102	401 012 6903	CARBON	10K	JA	1/4W
(JACKS)					
JK811	613 105 5773	JACK,MIC,MIC-JACK			
JK812	613 105 5773	JACK,MIC,MIC-JACK			

COMPL PWB,TB-4

COMPLNO.613 162 2418

(VARIABLE RESISTOR)		
VR821	645 006 8232	VR,ROTARY 10KB
(JACK)		
JK821	613 099 9191	JACK,HEADPHONE-JACK
(MISCELLANEOUS)		
	613 083 8643	CORD,TERMINAL

COMPL, PWB, TB-5

COMPLNO.613 164 4830

(RESISTOR)			
R8651	401 022 6702	CARBON 75	JA 1/4W
(SWITCH)			
S8651	613 081 0946	SLIDE SWITCH2-2	

COMPL PCB,VP-1

COMPLNO.613 164 4823

(SEMICONDUCTORS)		
B1801	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1801	405 012 9506	TR 2SC2058S-Q
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1802	405 012 9506	TR 2SC2058S-Q
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA

LOCATION	PARTS NO.	DESCRIPTION
Q1803	405 012 9506	TR 2SC2058S-Q
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1804	405 012 9506	TR 2SC2058S-Q
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1805	405 019 2005	TR 2SC536-E-SPA
OR	405 019 2807	TR 2SC536-F-SPA
Q1806	405 019 2005	TR 2SC536-E-SPA
OR	405 019 2807	TR 2SC536-F-SPA
Q1807	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1808	405 019 2005	TR 2SC536-E-SPA
OR	405 019 2807	TR 2SC536-F-SPA
Q1809	405 012 9506	TR 2SC2058S-Q
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1810	405 012 9506	TR 2SC2058S-Q
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1812	405 012 9506	TR 2SC2058S-Q
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA

(INTEGRATED CIRCUITS)

LOCATION	PARTS NO.	DESCRIPTION
IC181	409 225 6208	IC UPC2320GS
IC291	409 208 5808	IC UPC2350GS

(DIODE)

LOCATION	PARTS NO.	DESCRIPTION
D1801	407 063 9603	ZENER DIODE MTZJ9.1A

(VARIABLE RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION
VR181	645 001 9470	VR,SEMI 1K N
OR	645 003 5647	VR,SEMI,1K N
VR182	645 003 5142	VR,SEMI,2.2K N
OR	645 003 5685	VR,SEMI,2.2K N
VR183	645 003 5142	VR,SEMI,2.2K N
OR	645 003 5685	VR,SEMI,2.2K N

(INDUCTORS)

LOCATION	PARTS NO.	DESCRIPTION
L1801	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1803	645 002 1435	INDUCTOR 150U J
OR	645 011 1556	INDUCTOR,150U J
L1804	645 001 4642	INDUCTOR 22U J
OR	645 003 8013	INDUCTOR,22U J
L1805	645 001 5472	INDUCTOR 33U J
OR	645 003 8105	INDUCTOR,33U J
L1806	645 002 1442	INDUCTOR 18U J
OR	645 003 7986	INDUCTOR,18U J
L1851	645 001 5441	INDUCTOR,2.2U K
OR	645 005 3887	INDUCTOR,2.2U M
L2901	645 001 4642	INDUCTOR 22U J
OR	645 003 8013	INDUCTOR,22U J

(CAPACITORS)

LOCATION	PARTS NO.	DESCRIPTION			
C1801	403 094 0008	OS-SOLID	10U	M	16V
C1802	403 001 1906	CERAMIC	0.01U	M	16V
C1803	403 071 5408	CERAMIC	220P	J	50V
C1804	403 071 5408	CERAMIC	220P	J	50V
C1805	403 014 2600	CERAMIC	18P	J	50V
C1806	403 120 9302	CERAMIC	0.033U	K	16V
C1807	403 120 9302	CERAMIC	0.033U	K	16V
C1808	403 001 1906	CERAMIC	0.01U	M	16V
C1809	403 001 1906	CERAMIC	0.01U	M	16V
C1810	403 191 8709	ELECT	1U	M	50V
C1811	403 001 1906	CERAMIC	0.01U	M	16V
C1812	403 001 1906	CERAMIC	0.01U	M	16V
C1813	403 017 9705	CERAMIC	22P	J	50V
C1814	403 001 1906	CERAMIC	0.01U	M	16V
C1821	403 001 1906	CERAMIC	0.01U	M	16V

LOCATION	PARTS NO.	DESCRIPTION			
C1822	403 001 1906	CERAMIC	0.01U	M	16V
C1823	403 001 1906	CERAMIC	0.01U	M	16V
C1824	403 001 1906	CERAMIC	0.01U	M	16V
C1825	403 028 3402	CERAMIC	56P	J	50V
C1826	403 009 1809	CERAMIC	10P	J	50V
C1827	403 094 0008	OS-SOLID	10U	M	16V
C1828	403 001 1906	CERAMIC	0.01U	M	16V
C1842	403 017 9705	CERAMIC	22P	J	50V
C1843	403 017 9705	CERAMIC	22P	J	50V
C1844	403 068 8801	CERAMIC	100P	J	50V
C1851	403 191 8709	ELECT	1U	M	50V
C1853	403 094 0008	OS-SOLID	10U	M	16V
C1855	403 022 7703	CERAMIC	33P	J	50V
C1861	403 193 8608	ELECT	0.47U	M	50V
C1862	403 193 8608	ELECT	0.47U	M	50V
C1863	403 193 8608	ELECT	0.47U	M	50V
C1864	403 193 8608	ELECT	0.47U	M	50V
C1865	403 001 1906	CERAMIC	0.01U	M	16V
C1866	403 001 1906	CERAMIC	0.01U	M	16V
C1867	403 001 1906	CERAMIC	0.01U	M	16V
C1868	403 001 1906	CERAMIC	0.01U	M	16V
C1869	403 030 2103	CERAMIC	6.8P	K	50V
C1870	403 030 2103	CERAMIC	6.8P	K	50V
C1871	403 030 2103	CERAMIC	6.8P	K	50V
C1872	403 030 2103	CERAMIC	6.8P	K	50V
C2901	403 222 1105	CERAMIC	0.047U	Z	16V
C2902	403 094 0008	OS-SOLID	10U	M	16V
C2903	403 001 1906	CERAMIC	0.01U	M	16V
C2904	403 001 1906	CERAMIC	0.01U	M	16V
C2905	403 001 1906	CERAMIC	0.01U	M	16V
C2906	403 001 1906	CERAMIC	0.01U	M	16V
C2907	403 001 1906	CERAMIC	0.01U	M	16V
C2908	403 163 7907	ELECT	47U	M	6.3V
C2909	403 001 1906	CERAMIC	0.01U	M	16V
C2910	403 001 1906	CERAMIC	0.01U	M	16V
C2911	403 193 8202	ELECT	0.1U	M	50V
C2912	403 001 1906	CERAMIC	0.01U	M	16V
C2914	403 001 1906	CERAMIC	0.01U	M	16V
C2916	403 193 8202	ELECT	0.1U	M	50V
C2917	403 001 1906	CERAMIC	0.01U	M	16V
C2918	403 072 8200	CERAMIC	330P	K	50V

(RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION			
R1801	401 023 1607	CARBON	820	JA	1/4W
R1802	401 023 1607	CARBON	820	JA	1/4W
R1803	401 012 5609	CARBON	1K	JA	1/4W
R1804	401 016 2505	CARBON	220	JA	1/4W
R1805	401 017 0708	CARBON	270	JA	1/4W
R1806	401 014 4006	CARBON	1.5K	JA	1/4W
R1807	401 021 0602	CARBON	56	JA	1/4W
R1808	401 017 0708	CARBON	270	JA	1/4W
R1809	401 014 4006	CARBON	1.5K	JA	1/4W
R1810	401 021 0602	CARBON	56	JA	1/4W
R1811	401 020 0702	CARBON	470	JA	1/4W
R1812	401 012 4404	CARBON	100	JA	1/4W
R1813	401 012 5609	CARBON	1K	JA	1/4W
R1814	401 020 2805	CARBON	47K	JA	1/4W
R1815	401 021 1807	CARBON	560	JA	1/4W
R1816	401 012 8006	CARBON	100K	JA	1/4W
R1821	401 012 4404	CARBON	100	JA	1/4W
R1822	401 014 4006	CARBON	1.5K	JA	1/4W
R1823	401 012 5609	CARBON	1K	JA	1/4W
R1824	401 018 4804	CARBON	33K	JA	1/4W
R1825	401 014 5102	CARBON	15K	JA	1/4W
R1826	401 014 5102	CARBON	15K	JA	1/4W
R1827	401 013 6308	CARBON	12K	JA	1/4W
R1828	401 023 1607	CARBON	820	JA	1/4W
R1829	401 020 0702	CARBON	470	JA	1/4W
R1831	401 014 2804	CARBON	150	JA	1/4W
R1832	401 014 2804	CARBON	150	JA	1/4W
R1833	401 015 1509	CARBON	180	JA	1/4W
R1834	401 015 1509	CARBON	180	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1842	401 014 5102	CARBON	15K	JA	1/4W
R1843	401 020 1907	CARBON	4.7K	JA	1/4W
R1844	401 020 2805	CARBON	47K	JA	1/4W
R1845	401 012 5609	CARBON	1K	JA	1/4W
R1846	401 020 1907	CARBON	4.7K	JA	1/4W
R1847	401 012 5609	CARBON	1K	JA	1/4W
R1848	401 012 9201	CARBON	1M	JA	1/4W
R1853	401 018 2701	CARBON	330	JA	1/4W
R1855	401 012 6903	CARBON	10K	JA	1/4W
R1856	401 020 1907	CARBON	4.7K	JA	1/4W
R1861	401 018 1506	CARBON	33	JA	1/4W
R1862	401 018 1506	CARBON	33	JA	1/4W
R1863	401 012 3308	CARBON	10	JA	1/4W
R1864	401 012 3308	CARBON	10	JA	1/4W
R1865	401 012 3308	CARBON	10	JA	1/4W
R1866	401 012 3308	CARBON	10	JA	1/4W
R1867	401 012 3308	CARBON	10	JA	1/4W
R1868	401 012 3308	CARBON	10	JA	1/4W
R1869	401 016 3700	CARBON	2.2K	JA	1/4W
R1870	401 016 3700	CARBON	2.2K	JA	1/4W
R2903	401 016 4707	CARBON	22K	JA	1/4W
R2904	401 016 4707	CARBON	22K	JA	1/4W
R2907	401 012 3308	CARBON	10	JA	1/4W
R2908	401 012 3308	CARBON	10	JA	1/4W
R2911	401 018 2701	CARBON	330	JA	1/4W

COMPL PWB,VD-1

COMPLNO.613 162 2340

(SEMICONDUCTORS)

LOCATION	PARTS NO.	DESCRIPTION
Q1001	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1002	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1004	405 063 9708	TR DTC144EL
Q1005	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1006	405 063 9708	TR DTC144EL
Q1007	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1008	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1009	405 063 9708	TR DTC144EL
Q1010	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1012	405 063 9708	TR DTC144EL
Q1013	405 063 9708	TR DTC144EL
Q1014	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1015	405 063 9708	TR DTC144EL
Q1016	405 063 9708	TR DTC144EL
Q1050	405 082 7204	TR 2SC4039 Q
Q1051	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1052	405 063 9708	TR DTC144EL
Q1053	405 082 7204	TR 2SC4039 Q
Q1054	405 082 7204	TR 2SC4039 Q
Q1055	405 082 7204	TR 2SC4039 Q
Q1056	405 082 7204	TR 2SC4039 Q
Q1057	405 082 7204	TR 2SC4039 Q
Q1058	405 082 7204	TR 2SC4039 Q
Q1059	405 082 7204	TR 2SC4039 Q
Q1060	405 082 7204	TR 2SC4039 Q
Q1061	405 063 9708	TR DTC144EL
Q1062	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1063	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1064	405 063 9708	TR DTC144EL
Q1065	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1066	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1067	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1101	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1102	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1103	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1104	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1105	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1106	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1107	405 063 9708	TR DTC144EL
Q1108	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1109	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1110	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1111	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1112	405 063 9708	TR DTC144EL
Q1113	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1114	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1115	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1116	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1199	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S

LOCATION	PARTS NO.	DESCRIPTION
Q1201	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1202	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1203	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1204	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1205	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1206	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1207	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1208	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1209	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1210	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1301	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1302	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1303	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1304	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1306	405 082 7204	TR 2SC4039 Q
Q1307	405 082 7204	TR 2SC4039 Q
Q1308	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1309	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1310	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1311	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1312	405 012 9506	TR 2SC2058S-Q
OR	405 015 2504	TR 2SC2669-O
OR	405 015 2603	TR 2SC2669-Y
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1313	405 012 9506	TR 2SC2058S-Q
OR	405 015 2504	TR 2SC2669-O
OR	405 015 2603	TR 2SC2669-Y
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1314	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1315	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1316	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1318	405 082 7204	TR 2SC4039 Q
Q1319	405 082 7204	TR 2SC4039 Q
Q1320	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1321	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1322	405 063 9708	TR DTC144EL
Q1323	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1401	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1402	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1407	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1408	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1409	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1410	405 006 6504	TR 2SA984-E
OR	405 006 6702	TR 2SA984-F
OR	405 006 7006	TR 2SA984K-E
OR	405 006 7204	TR 2SA984K-F
Q1411	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1412	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1413	405 089 2004	TR 2SC4483-R
OR	405 089 2103	TR 2SC4483-S

LOCATION	PARTS NO.	DESCRIPTION
Q1414	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1415	405 006 6504	TR 2SA984-E
OR	405 006 6702	TR 2SA984-F
OR	405 006 7006	TR 2SA984K-E
OR	405 006 7204	TR 2SA984K-F
Q1416	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1417	405 063 9708	TR DTC144EL
Q1418	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1419	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1420	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1421	405 082 7204	TR 2SC4039 Q
Q1422	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1423	405 082 7204	TR 2SC4039 Q
Q1424	405 082 7204	TR 2SC4039 Q
Q1425	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1426	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1427	405 082 7204	TR 2SC4039 Q
Q1428	405 082 7204	TR 2SC4039 Q
Q1429	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1430	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1431	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1432	405 012 9506	TR 2SC2058S-Q
OR	405 015 2504	TR 2SC2669-O
OR	405 015 2603	TR 2SC2669-Y
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1433	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1434	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1435	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1436	405 089 2004	TR 2SC4483-R
OR	405 089 2103	TR 2SC4483-S
Q1437	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1438	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1439	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399

LOCATION	PARTS NO.	DESCRIPTION
Q1501	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1502	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1503	405 012 9506	TR 2SC2058S-Q
OR	405 015 2504	TR 2SC2669-O
OR	405 015 2603	TR 2SC2669-Y
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1505	405 012 9506	TR 2SC2058S-Q
OR	405 015 2504	TR 2SC2669-O
OR	405 015 2603	TR 2SC2669-Y
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1506	405 012 9506	TR 2SC2058S-Q
OR	405 015 2504	TR 2SC2669-O
OR	405 015 2603	TR 2SC2669-Y
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1507	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1508	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1509	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1510	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1511	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1512	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1513	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1514	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1515	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1516	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1517	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1518	405 012 9506	TR 2SC2058S-Q
OR	405 015 2504	TR 2SC2669-O
OR	405 015 2603	TR 2SC2669-Y
OR	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q1519	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1520	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1521	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1701	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R

LOCATION	PARTS NO.	DESCRIPTION
Q1702	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1703	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1704	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1705	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1706	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1707	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1708	405 057 6201	TR 2SC4038-Q
OR	405 057 6409	TR 2SC4038-R
Q1709	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1710	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1711	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1712	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1713	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1750	405 064 0100	TR 2SA1561-Q
OR	405 064 0209	TR 2SA1561-R
Q1751	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q1752	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1753	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q1754	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q1755	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R

(INTEGRATED CIRCUITS)

LOCATION	PARTS NO.	DESCRIPTION
IC101	409 346 3506	IC M52365GP
IC111	409 209 3308	IC VC-2076DP
IC112	409 182 9007	IC NJM2234L
IC113	409 182 8901	IC NJM2235L
IC114	409 346 3704	IC CXL5505P
IC121	409 319 0600	IC MC141625AFU
IC122	409 352 1404	IC MM1031XS
IC123	409 352 1503	IC MM1041XS
IC124	409 352 1404	IC MM1031XS
IC125	409 172 6801	IC BA7604N
IC131	409 223 6606	IC CXL1506M
IC132	409 003 4501	IC BA7021
OR	409 120 3401	IC LA7221
IC133	409 172 6801	IC BA7604N
IC135	409 182 9007	IC NJM2234L
IC136	409 182 8901	IC NJM2235L
IC137	409 182 8901	IC NJM2235L
IC141	409 225 6109	IC BA7046
IC142	409 312 8603	IC M35011-001SP
IC143	409 352 1305	IC MM1024AF
IC144	409 168 8406	IC BA7605N
IC145	409 067 7203	IC L5431
IC151	409 347 4700	IC M52370AFP
IC152	409 182 9007	IC NJM2234L
IC161	409 225 6109	IC BA7046
IC162	409 128 8903	IC M51271SP
IC163	409 128 8903	IC M51271SP
IC171	409 182 8901	IC NJM2235L
IC172	409 182 9007	IC NJM2234L
IC173	409 111 9306	IC LA7213
IC174	409 172 6801	IC BA7604N
IC175	409 003 4501	IC BA7021
OR	409 120 3401	IC LA7221
IC176	409 003 4501	IC BA7021
OR	409 120 3401	IC LA7221
IC177	409 352 1503	IC MM1041XS
IC178	409 182 9106	IC AN3916
IC179	409 352 1602	IC MM1093PF

(DIODES)

LOCATION	PARTS NO.	DESCRIPTION
D1003	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1004	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1005	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1050	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1301	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1302	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1401	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1402	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1403	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1404	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1405	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1406	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1407	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1701	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1702	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1703	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D1704	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133

(CRYSTAL DEVICES)

LOCATION	PARTS NO.	DESCRIPTION
X1401	645 000 5374	OSC,CRYSTAL 17.734475MHZ
X1501	613 115 7514	OSC,CRYSTAL 4.43MHZ
X1601	645 000 5374	OSC,CRYSTAL 17.734475MHZ

LOCATION	PARTS NO.	DESCRIPTION
X1602	645 000 5374	OSC,CRYSTAL 17.734475MHZ
X1701	613 135 5439	OSC,CRYSTAL 4.433MHZ

(CERAMIC RESONATORS)

LOCATION	PARTS NO.	DESCRIPTION
XF111	613 100 5297	FILTER
XF112	645 009 5894	FILTER,LP 3.5MHZ
XF113	645 011 4830	FILTER,LP 6MHZ
XF121	645 008 5178	FILTER,LP 7MHZ
XF122	645 008 5178	FILTER,LP 7MHZ
XF123	645 008 5116	FILTER,BP 4.43MHZ
XF131	613 100 5280	FILTER,6MHZ L.P.F
XF132	613 108 2458	FILTER,DL 250MS
XF133	645 009 5887	FILTER,LP 6MHZ
XF134	645 009 5870	FILTER,BP 4.43MHZ
XF151	645 008 5130	FILTER,TR 10.12MHZ
XF152	645 008 5123	FILTER,BP 4.43MHZ
XF161	645 008 5116	FILTER,BP 4.43MHZ
XF171	645 008 5116	FILTER,BP 4.43MHZ

(VARIABLE RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION
VR111	645 002 0926	VR,SEMI 100K N
OR	645 003 5203	VR,SEMI,100K N
VR112	645 003 5326	VR,SEMI,4.7K N
OR	645 003 5470	VR,SEMI,4.7K N
VR113	645 003 5326	VR,SEMI,4.7K N
OR	645 003 5470	VR,SEMI,4.7K N
VR114	645 003 5326	VR,SEMI,4.7K N
OR	645 003 5470	VR,SEMI,4.7K N
VR115	645 003 5326	VR,SEMI,4.7K N
OR	645 003 5470	VR,SEMI,4.7K N
VR116	645 003 5326	VR,SEMI,4.7K N
OR	645 003 5470	VR,SEMI,4.7K N
VR117	645 002 0919	VR,SEMI 10K N
OR	645 003 5197	VR,SEMI,10K N
VR118	645 002 0919	VR,SEMI 10K N
OR	645 003 5197	VR,SEMI,10K N
VR119	645 002 0919	VR,SEMI 10K N
OR	645 003 5197	VR,SEMI,10K N
VR120	645 003 5333	VR,SEMI,47K N
OR	645 010 6422	VR,SEMI,47K N
VR121	645 002 0902	VR,SEMI 1K N
OR	645 003 5180	VR,SEMI,1K N
VR131	645 003 5319	VR,SEMI,470 N
VR132	645 003 5258	VR,SEMI,2.2K N
OR	645 003 5449	VR,SEMI,2.2K N
VR133	645 002 0902	VR,SEMI 1K N
OR	645 003 5180	VR,SEMI,1K N
VR134	645 002 0902	VR,SEMI 1K N
OR	645 003 5180	VR,SEMI,1K N
VR135	645 003 5319	VR,SEMI,470 N
VR136	645 002 0902	VR,SEMI 1K N
OR	645 003 5180	VR,SEMI,1K N
VR141	645 002 0902	VR,SEMI 1K N
OR	645 003 5180	VR,SEMI,1K N
VR142	645 003 5258	VR,SEMI,2.2K N
OR	645 003 5449	VR,SEMI,2.2K N
VR151	645 003 5258	VR,SEMI,2.2K N
OR	645 003 5449	VR,SEMI,2.2K N
VR152	645 003 5302	VR,SEMI,3.3K N
VR153	645 003 5319	VR,SEMI,470 N
VR171	645 003 5333	VR,SEMI,47K N

(INDUCTORS)

LOCATION	PARTS NO.	DESCRIPTION
L1001	645 002 1442	INDUCTOR 18U J
OR	645 003 7986	INDUCTOR,18U J
L1050	645 003 8341	INDUCTOR,180U J
OR	645 003 8747	INDUCTOR,180U J
L1051	645 001 4574	INDUCTOR 100U J
OR	645 003 7917	INDUCTOR,100U J
L1052	645 002 1503	INDUCTOR 6.8U J
OR	645 003 8204	INDUCTOR,6.8U J
L1053	645 002 1442	INDUCTOR 18U J
OR	645 003 7986	INDUCTOR,18U J

LOCATION	PARTS NO.	DESCRIPTION
L1054	645 001 5496	INDUCTOR 39U J
OR	645 003 8129	INDUCTOR,39U J
L1055	645 001 5472	INDUCTOR 33U J
OR	645 003 8105	INDUCTOR,33U J
L1056	645 001 5496	INDUCTOR 39U J
OR	645 003 8129	INDUCTOR,39U J
L1057	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1058	645 001 4642	INDUCTOR 22U J
OR	645 003 8013	INDUCTOR,22U J
L1059	645 002 1442	INDUCTOR 18U J
OR	645 003 7986	INDUCTOR,18U J
L1060	645 001 4598	INDUCTOR 12U J
OR	645 003 7931	INDUCTOR,12U J
L1061	645 003 8341	INDUCTOR,180U J
OR	645 003 8747	INDUCTOR,180U J
L1062	645 002 1510	INDUCTOR 68U J
OR	645 003 8228	INDUCTOR,68U J
L1063	645 001 5533	INDUCTOR 82U J
OR	645 003 7610	INDUCTOR,82U J
L1064	645 001 4642	INDUCTOR 22U J
OR	645 003 8013	INDUCTOR,22U J
L1065	645 002 1503	INDUCTOR 6.8U J
OR	645 003 8204	INDUCTOR,6.8U J
L1066	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1067	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1068	645 001 4598	INDUCTOR 12U J
OR	645 003 7931	INDUCTOR,12U J
L1101	645 001 5496	INDUCTOR 39U J
OR	645 003 8129	INDUCTOR,39U J
L1102	645 001 5502	INDUCTOR 47U J
OR	645 003 8150	INDUCTOR,47U J
L1103	645 001 5502	INDUCTOR 47U J
OR	645 003 8150	INDUCTOR,47U J
L1104	645 003 6255	INDUCTOR,1U M
OR	645 005 3856	INDUCTOR,1U M
L1105	645 003 6255	INDUCTOR,1U M
OR	645 005 3856	INDUCTOR,1U M
L1107	645 001 4574	INDUCTOR 100U J
OR	645 003 7917	INDUCTOR,100U J
L1108	645 002 1510	INDUCTOR 68U J
OR	645 003 8228	INDUCTOR,68U J
L1109	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1110	645 001 5496	INDUCTOR 39U J
OR	645 003 8129	INDUCTOR,39U J
L1201	645 003 6255	INDUCTOR,1U M
OR	645 005 3856	INDUCTOR,1U M
L1202	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1203	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1204	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1205	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1206	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1301	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L1304	645 002 1428	INDUCTOR 15U J
OR	645 003 7955	INDUCTOR,15U J
L1305	645 001 5472	INDUCTOR 33U J
OR	645 003 8105	INDUCTOR,33U J
L1401	645 001 5472	INDUCTOR 33U J
OR	645 003 8105	INDUCTOR,33U J
L1402	645 001 4642	INDUCTOR 22U J
OR	645 003 8013	INDUCTOR,22U J
L1403	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J

LOCATION	PARTS NO.	DESCRIPTION			
L1404	645 002 1428	INDUCTOR 15U J			
OR	645 003 7955	INDUCTOR,15U J			
L1405	645 003 6934	INDUCTOR,100U J			
OR	645 003 7634	INDUCTOR,100U J			
L1501	645 001 5472	INDUCTOR 33U J			
OR	645 003 8105	INDUCTOR,33U J			
L1502	645 001 5458	INDUCTOR 27U J			
OR	645 003 8051	INDUCTOR,27U J			
L1504	645 001 4659	INDUCTOR 220U J			
OR	645 003 8037	INDUCTOR,220U J			
L1505	645 002 1411	INDUCTOR 10U J			
OR	645 003 7894	INDUCTOR,10U J			
L1506	645 002 1411	INDUCTOR 10U J			
OR	645 003 7894	INDUCTOR,10U J			
L1508	645 002 1435	INDUCTOR 150U J			
OR	645 011 1556	INDUCTOR,150U J			
L1509	645 002 1411	INDUCTOR 10U J			
OR	645 003 7894	INDUCTOR,10U J			
L1510	645 001 5458	INDUCTOR 27U J			
OR	645 003 8051	INDUCTOR,27U J			
L1511	645 002 1411	INDUCTOR 10U J			
OR	645 003 7894	INDUCTOR,10U J			
L1512	645 002 1411	INDUCTOR 10U J			
OR	645 003 7894	INDUCTOR,10U J			
L1513	645 002 1428	INDUCTOR 15U J			
OR	645 003 7955	INDUCTOR,15U J			
L1514	645 001 5502	INDUCTOR 47U J			
OR	645 003 8150	INDUCTOR,47U J			
L1517	645 002 1497	INDUCTOR 56U J			
OR	645 003 8181	INDUCTOR,56U J			
L1518	645 002 1497	INDUCTOR 56U J			
OR	645 003 8181	INDUCTOR,56U J			
L1750	645 002 1411	INDUCTOR 10U J			
OR	645 003 7894	INDUCTOR,10U J			
(DELAY LINES)					
DL151	645 008 5109	DELAY LINE			
DL152	613 077 4118	DELAY,2H			
OR	613 089 7213	DELAY,2H			
(CAPACITORS)					
C1001	403 107 9905	ELECT	10U	M	16V
C1002	403 001 1906	CERAMIC	0.01U	M	16V
C1004	403 001 1906	CERAMIC	0.01U	M	16V
C1006	403 107 9905	ELECT	10U	M	16V
C1007	403 107 9905	ELECT	10U	M	16V
C1008	403 159 8109	ELECT	100U	M	6.3V
C1009	403 121 9509	CERAMIC	0.1U	Z	50V
C1010	403 001 1906	CERAMIC	0.01U	M	16V
C1011	403 001 1906	CERAMIC	0.01U	M	16V
C1012	403 017 9705	CERAMIC	22P	J	50V
C1013	403 073 6205	CERAMIC	470P	J	50V
C1014	403 001 1906	CERAMIC	0.01U	M	16V
C1015	403 014 2600	CERAMIC	18P	J	50V
C1016	403 070 3702	CERAMIC	120P	J	50V
C1017	403 074 8703	CERAMIC	680P	J	50V
C1018	403 121 9509	CERAMIC	0.1U	Z	50V
C1019	403 026 2209	CERAMIC	47P	J	50V
C1020	403 009 1809	CERAMIC	10P	J	50V
C1021	403 001 1906	CERAMIC	0.01U	M	16V
C1022	403 001 1906	CERAMIC	0.01U	M	16V
C1023	403 024 1501	CERAMIC	39P	J	50V
C1024	403 191 8808	ELECT	2.2U	M	50V
C1025	403 024 6902	CERAMIC	390P	J	50V
C1027	403 017 9705	CERAMIC	22P	J	50V
C1028	403 107 9905	ELECT	10U	M	16V
C1029	403 107 9905	ELECT	10U	M	16V
C1030	403 121 3408	ELECT	2.2U	M	50V
C1031	403 028 3402	CERAMIC	56P	J	50V
C1032	403 121 3408	ELECT	2.2U	M	50V
C1033	403 222 1105	CERAMIC	0.047U	Z	16V
C1035	403 001 1906	CERAMIC	0.01U	M	16V
C1036	403 135 4002	ELECT	47U	M	6.3V
C1037	403 001 1906	CERAMIC	0.01U	M	16V
C1038	403 191 8808	ELECT	2.2U	M	50V
C1039	403 121 3408	ELECT	2.2U	M	50V
C1040	403 121 3408	ELECT	2.2U	M	50V
C1041	403 135 4002	ELECT	47U	M	6.3V
C1042	403 001 1906	CERAMIC	0.01U	M	16V
C1049	403 026 2209	CERAMIC	47P	J	50V
C1050	403 001 1906	CERAMIC	0.01U	M	16V
C1051	403 073 2702	CERAMIC	390P	J	50V
C1052	403 009 1809	CERAMIC	10P	J	50V
C1054	403 014 2600	CERAMIC	18P	J	50V
C1055	403 001 1906	CERAMIC	0.01U	M	16V
C1056	403 010 7807	CERAMIC	12P	J	50V
C1057	403 024 1501	CERAMIC	39P	J	50V
C1058	403 121 9509	CERAMIC	0.1U	Z	50V
C1059	403 121 9509	CERAMIC	0.1U	Z	50V
C1060	403 163 7907	ELECT	47U	M	6.3V
C1061	403 222 1105	CERAMIC	0.047U	Z	16V
C1062	403 073 2702	CERAMIC	390P	J	50V
C1064	403 010 7807	CERAMIC	12P	J	50V
C1066	403 019 9703	CERAMIC	27P	J	50V
C1067	403 001 1906	CERAMIC	0.01U	M	16V
C1068	403 028 3402	CERAMIC	56P	J	50V
C1069	403 017 9705	CERAMIC	22P	J	50V
C1070	403 072 7500	CERAMIC	330P	J	50V
C1071	403 010 7807	CERAMIC	12P	J	50V
C1072	403 024 1501	CERAMIC	39P	J	50V
C1073	403 074 8703	CERAMIC	680P	J	50V
C1074	403 024 1501	CERAMIC	39P	J	50V
C1075	403 017 9705	CERAMIC	22P	J	50V
C1076	403 071 1509	CERAMIC	180P	J	50V
C1077	403 026 2209	CERAMIC	47P	J	50V
C1078	403 068 8801	CERAMIC	100P	J	50V
C1080	403 222 1105	CERAMIC	0.047U	Z	16V
C1081	403 163 7907	ELECT	47U	M	6.3V
C1082	403 009 1809	CERAMIC	10P	J	50V
C1083	403 022 7703	CERAMIC	33P	J	50V
C1085	403 026 2209	CERAMIC	47P	J	50V
C1087	403 001 1906	CERAMIC	0.01U	M	16V
C1088	403 026 2209	CERAMIC	47P	J	50V
C1091	403 001 1906	CERAMIC	0.01U	M	16V
C1093	403 001 1906	CERAMIC	0.01U	M	16V
C1094	403 140 9207	NP-ELECT	10U	M	16V
C1101	403 001 1906	CERAMIC	0.01U	M	16V
C1102	403 121 3408	ELECT	2.2U	M	50V
C1103	403 121 3408	ELECT	2.2U	M	50V
C1104	403 026 2209	CERAMIC	47P	J	50V
C1105	403 001 1906	CERAMIC	0.01U	M	16V
C1106	403 150 6500	ELECT	22U	M	16V
C1107	403 121 2401	ELECT	22U	M	16V
C1108	403 001 1906	CERAMIC	0.01U	M	16V
C1109	403 014 2600	CERAMIC	18P	J	50V
C1110	403 135 4002	ELECT	47U	M	6.3V
C1111	403 163 7907	ELECT	47U	M	6.3V
C1112	403 163 7907	ELECT	47U	M	6.3V
C1113	403 009 1809	CERAMIC	10P	J	50V
C1114	403 135 4002	ELECT	47U	M	6.3V
C1115	403 014 2600	CERAMIC	18P	J	50V
C1116	403 026 2209	CERAMIC	47P	J	50V
C1117	403 026 2209	CERAMIC	47P	J	50V
C1118	403 001 1906	CERAMIC	0.01U	M	16V
C1119	403 121 2401	ELECT	22U	M	16V
C1120	403 001 1906	CERAMIC	0.01U	M	16V
C1121	403 121 2401	ELECT	22U	M	16V
C1122	403 139 2707	ELECT	1U	M	50V
C1123	403 069 0309	CERAMIC	1000P	J	50V
C1124	403 121 9509	CERAMIC	0.1U	Z	50V
C1125	403 191 8709	ELECT	1U	M	50V
C1127	403 024 1501	CERAMIC	39P	J	50V
C1128	403 022 7703	CERAMIC	33P	J	50V
C1129	403 159 8109	ELECT	100U	M	6.3V
C1130	403 001 1906	CERAMIC	0.01U	M	16V
C1131	403 163 7907	ELECT	47U	M	6.3V

LOCATION	PARTS NO.	DESCRIPTION			
C1132	403 159 8109	ELECT	100U	M	6.3V
C1133	403 191 8808	ELECT	2.2U	M	50V
C1134	403 191 8808	ELECT	2.2U	M	50V
C1135	403 144 4307	CERAMIC	82P	G	50V
C1136	403 195 9207	CERAMIC	300P	G	50V
C1137	403 144 4505	CERAMIC	270P	G	50V
C1138	403 072 4202	CERAMIC	270P	J	50V
C1139	403 026 2209	CERAMIC	47P	J	50V
C1140	403 121 2401	ELECT	22U	M	16V
C1142	403 107 9905	ELECT	10U	M	16V
C1143	403 001 1906	CERAMIC	0.01U	M	16V
C1144	403 001 1906	CERAMIC	0.01U	M	16V
C1145	403 001 1906	CERAMIC	0.01U	M	16V
C1146	403 001 1906	CERAMIC	0.01U	M	16V
C1147	403 001 1906	CERAMIC	0.01U	M	16V
C1148	403 030 6309	CERAMIC	68P	J	50V
C1150	403 022 7703	CERAMIC	33P	J	50V
C1201	403 001 1906	CERAMIC	0.01U	M	16V
C1202	403 121 2401	ELECT	22U	M	16V
C1203	403 001 1906	CERAMIC	0.01U	M	16V
C1204	403 001 1906	CERAMIC	0.01U	M	16V
C1207	403 001 1906	CERAMIC	0.01U	M	16V
C1208	403 001 1906	CERAMIC	0.01U	M	16V
C1209	403 001 1906	CERAMIC	0.01U	M	16V
C1210	403 135 4002	ELECT	47U	M	6.3V
C1211	403 135 4002	ELECT	47U	M	6.3V
C1212	403 121 3408	ELECT	2.2U	M	50V
C1214	403 121 3408	ELECT	2.2U	M	50V
C1215	403 191 8709	ELECT	1U	M	50V
C1216	403 139 2707	ELECT	1U	M	50V
C1217	403 134 9602	ELECT	47U	M	16V
C1218	403 001 1906	CERAMIC	0.01U	M	16V
C1219	403 163 8409	ELECT	47U	M	16V
C1220	403 001 1906	CERAMIC	0.01U	M	16V
C1221	403 135 4002	ELECT	47U	M	6.3V
C1222	403 001 1906	CERAMIC	0.01U	M	16V
C1223	403 135 4002	ELECT	47U	M	6.3V
C1224	403 121 9509	CERAMIC	0.1U	Z	50V
C1225	403 121 9509	CERAMIC	0.1U	Z	50V
C1226	403 121 9509	CERAMIC	0.1U	Z	50V
C1227	403 135 4002	ELECT	47U	M	6.3V
C1228	403 121 9509	CERAMIC	0.1U	Z	50V
C1229	403 135 4002	ELECT	47U	M	6.3V
C1230	403 189 2405	ELECT	10U	M	16V
C1231	403 121 9509	CERAMIC	0.1U	Z	50V
C1232	403 189 2405	ELECT	10U	M	16V
C1233	403 121 9509	CERAMIC	0.1U	Z	50V
C1234	403 121 9509	CERAMIC	0.1U	Z	50V
C1236	403 001 1906	CERAMIC	0.01U	M	16V
C1237	403 135 4002	ELECT	47U	M	6.3V
C1238	403 107 9905	ELECT	10U	M	16V
C1240	403 001 1906	CERAMIC	0.01U	M	16V
C1241	403 107 9905	ELECT	10U	M	16V
C1242	403 001 1906	CERAMIC	0.01U	M	16V
C1243	403 107 9905	ELECT	10U	M	16V
C1244	403 001 1906	CERAMIC	0.01U	M	16V
C1245	403 107 9905	ELECT	10U	M	16V
C1246	403 001 1906	CERAMIC	0.01U	M	16V
C1247	403 030 6309	CERAMIC	68P	J	50V
C1302	403 107 9905	ELECT	10U	M	16V
C1303	403 001 1906	CERAMIC	0.01U	M	16V
C1304	403 001 1906	CERAMIC	0.01U	M	16V
C1305	403 107 9905	ELECT	10U	M	16V
C1306	403 001 1906	CERAMIC	0.01U	M	16V
C1307	403 121 2401	ELECT	22U	M	16V
C1308	403 121 2401	ELECT	22U	M	16V
C1309	403 001 1906	CERAMIC	0.01U	M	16V
C1310	403 001 1906	CERAMIC	0.01U	M	16V
C1311	403 121 2401	ELECT	22U	M	16V
C1312	403 024 1501	CERAMIC	39P	J	50V
C1313	403 001 1906	CERAMIC	0.01U	M	16V
C1314	403 121 3408	ELECT	2.2U	M	50V
C1315	403 134 9602	ELECT	47U	M	16V

LOCATION	PARTS NO.	DESCRIPTION			
C1316	403 166 1506	NP-ELECT	47U	M	16V
C1317	403 001 1906	CERAMIC	0.01U	M	16V
C1318	403 001 1906	CERAMIC	0.01U	M	16V
C1319	403 001 1906	CERAMIC	0.01U	M	16V
C1320	403 121 3408	ELECT	2.2U	M	50V
C1321	403 001 1906	CERAMIC	0.01U	M	16V
C1322	403 001 1906	CERAMIC	0.01U	M	16V
C1323	403 121 3408	ELECT	2.2U	M	50V
C1325	403 001 1906	CERAMIC	0.01U	M	16V
C1326	403 017 9705	CERAMIC	22P	J	50V
C1327	403 014 2600	CERAMIC	18P	J	50V
C1328	403 001 1906	CERAMIC	0.01U	M	16V
C1329	403 001 1906	CERAMIC	0.01U	M	16V
C1330	403 134 9602	ELECT	47U	M	16V
C1331	403 121 3408	ELECT	2.2U	M	50V
C1332	403 121 3408	ELECT	2.2U	M	50V
C1333	403 001 1906	CERAMIC	0.01U	M	16V
C1334	403 150 6500	ELECT	22U	M	16V
C1335	403 121 9509	CERAMIC	0.1U	Z	50V
C1336	403 134 9602	ELECT	47U	M	16V
C1337	403 139 2905	ELECT	2.2U	M	50V
C1338	403 191 8709	ELECT	1U	M	50V
C1339	403 121 9509	CERAMIC	0.1U	Z	50V
C1340	403 001 1906	CERAMIC	0.01U	M	16V
C1341	403 069 0309	CERAMIC	1000P	J	50V
C1342	403 001 1906	CERAMIC	0.01U	M	16V
C1343	403 125 5606	ELECT	100U	M	16V
C1344	403 107 9905	ELECT	10U	M	16V
C1345	403 134 9602	ELECT	47U	M	16V
C1346	403 001 1906	CERAMIC	0.01U	M	16V
C1347	403 001 1906	CERAMIC	0.01U	M	16V
C1348	403 121 9509	CERAMIC	0.1U	Z	50V
C1349	403 022 7703	CERAMIC	33P	J	50V
C1350	403 001 1906	CERAMIC	0.01U	M	16V
C1401	403 134 9602	ELECT	47U	M	16V
C1402	403 001 1906	CERAMIC	0.01U	M	16V
C1403	403 001 1906	CERAMIC	0.01U	M	16V
C1405	403 001 1906	CERAMIC	0.01U	M	16V
C1406	403 135 4002	ELECT	47U	M	6.3V
C1407	403 135 4101	ELECT	470U	M	6.3V
C1408	403 134 5802	ELECT	470U	M	16V
C1409	403 135 4002	ELECT	47U	M	6.3V
C1410	403 001 1906	CERAMIC	0.01U	M	16V
C1411	403 150 6500	ELECT	22U	M	16V
C1412	403 193 7809	ELECT	100U	M	16V
C1413	403 001 1906	CERAMIC	0.01U	M	16V
C1414	403 121 2401	ELECT	22U	M	16V
C1415	403 001 1906	CERAMIC	0.01U	M	16V
C1416	403 150 6500	ELECT	22U	M	16V
C1417	403 001 1906	CERAMIC	0.01U	M	16V
C1418	403 001 1906	CERAMIC	0.01U	M	16V
C1419	403 121 3408	ELECT	2.2U	M	50V
C1420	403 189 2405	ELECT	10U	M	16V
C1421	403 159 8109	ELECT	100U	M	6.3V
C1422	403 189 2405	ELECT	10U	M	16V
C1423	403 159 8109	ELECT	100U	M	6.3V
C1424	403 001 1906	CERAMIC	0.01U	M	16V
C1425	403 107 9905	ELECT	10U	M	16V
C1426	403 121 9509	CERAMIC	0.1U	Z	50V
C1427	403 121 2401	ELECT	22U	M	16V
C1428	403 001 1906	CERAMIC	0.01U	M	16V
C1429	403 001 1906	CERAMIC	0.01U	M	16V
C1430	403 001 1906	CERAMIC	0.01U	M	16V
C1431	403 068 8801	CERAMIC	100P	J	50V
C1432	403 121 9509	CERAMIC	0.1U	Z	50V
C1433	403 069 0309	CERAMIC	1000P	J	50V
C1434	403 068 8801	CERAMIC	100P	J	50V
C1435	403 071 5408	CERAMIC	220P	J	50V
C1436	403 010 7807	CERAMIC	12P	J	50V
C1437	403 001 1906	CERAMIC	0.01U	M	16V
C1438	403 107 9905	ELECT	10U	M	16V
C1439	403 001 1906	CERAMIC	0.01U	M	16V
C1440	403 107 9905	ELECT	10U	M	16V

LOCATION	PARTS NO.	DESCRIPTION			
C1441	403 001 1906	CERAMIC	0.01U	M	16V
C1442	403 001 1906	CERAMIC	0.01U	M	16V
C1443	403 109 6308	ELECT	1U	M	50V
C1444	403 001 1906	CERAMIC	0.01U	M	16V
C1445	403 134 9602	ELECT	47U	M	16V
C1446	403 134 9602	ELECT	47U	M	16V
C1447	403 074 8703	CERAMIC	680P	J	50V
C1448	403 109 6308	ELECT	1U	M	50V
C1449	403 109 6308	ELECT	1U	M	50V
C1450	403 059 3006	POLYESTER	2200P	J	50V
C1451	403 068 8801	CERAMIC	100P	J	50V
C1452	403 001 2606	CERAMIC	0.1U	K	16V
C1453	403 135 4002	ELECT	47U	M	6.3V
C1454	403 001 1906	CERAMIC	0.01U	M	16V
C1455	403 024 1501	CERAMIC	39P	J	50V
C1456	403 024 1501	CERAMIC	39P	J	50V
C1457	403 017 9705	CERAMIC	22P	J	50V
C1458	403 017 9705	CERAMIC	22P	J	50V
C1459	403 121 9509	CERAMIC	0.1U	Z	50V
C1460	403 001 1906	CERAMIC	0.01U	M	16V
C1461	403 121 2401	ELECT	22U	M	16V
C1462	403 001 1906	CERAMIC	0.01U	M	16V
C1463	403 134 8100	ELECT	100U	M	6.3V
C1464	403 121 9509	CERAMIC	0.1U	Z	50V
C1465	403 121 9509	CERAMIC	0.1U	Z	50V
C1466	403 121 2401	ELECT	22U	M	16V
C1467	403 001 1906	CERAMIC	0.01U	M	16V
C1468	403 121 2401	ELECT	22U	M	16V
C1470	403 107 9905	ELECT	10U	M	16V
C1471	403 001 1906	CERAMIC	0.01U	M	16V
C1472	403 107 9905	ELECT	10U	M	16V
C1473	403 001 1906	CERAMIC	0.01U	M	16V
C1474	403 001 1906	CERAMIC	0.01U	M	16V
C1475	403 001 1906	CERAMIC	0.01U	M	16V
C1476	403 068 8801	CERAMIC	100P	J	50V
C1477	403 068 8801	CERAMIC	100P	J	50V
C1478	403 068 8801	CERAMIC	100P	J	50V
C1501	403 135 4002	ELECT	47U	M	6.3V
C1502	403 121 9509	CERAMIC	0.1U	Z	50V
C1503	403 121 9509	CERAMIC	0.1U	Z	50V
C1504	403 135 4002	ELECT	47U	M	6.3V
C1505	403 022 7703	CERAMIC	33P	J	50V
C1506	403 026 2209	CERAMIC	47P	J	50V
C1507	403 027 8002	CERAMIC	5.6P	K	50V
C1508	403 001 1906	CERAMIC	0.01U	M	16V
C1509	403 001 1906	CERAMIC	0.01U	M	16V
C1510	403 069 0309	CERAMIC	1000P	J	50V
C1511	403 069 0309	CERAMIC	1000P	J	50V
C1512	403 068 8801	CERAMIC	100P	J	50V
C1513	403 068 8801	CERAMIC	100P	J	50V
C1514	403 010 7807	CERAMIC	12P	J	50V
C1515	403 001 1906	CERAMIC	0.01U	M	16V
C1516	403 028 3402	CERAMIC	56P	J	50V
C1517	403 022 7703	CERAMIC	33P	J	50V
C1518	403 009 1809	CERAMIC	10P	J	50V
C1519	403 026 2209	CERAMIC	47P	J	50V
C1520	403 001 1906	CERAMIC	0.01U	M	16V
C1521	403 013 1703	CERAMIC	150P	J	50V
C1522	403 026 7105	CERAMIC	470P	J	50V
C1523	403 001 1906	CERAMIC	0.01U	M	16V
C1524	403 001 1906	CERAMIC	0.01U	M	16V
C1525	403 009 1809	CERAMIC	10P	J	50V
C1526	403 073 2702	CERAMIC	390P	J	50V
C1527	403 001 1906	CERAMIC	0.01U	M	16V
C1528	403 121 2401	ELECT	22U	M	16V
C1529	403 121 3408	ELECT	2.2U	M	50V
C1530	403 163 7907	ELECT	47U	M	6.3V
C1531	403 167 7002	ELECT	4.7U	M	50V
C1532	403 191 8808	ELECT	2.2U	M	50V
C1533	403 121 9509	CERAMIC	0.1U	Z	50V
C1534	403 001 1906	CERAMIC	0.01U	M	16V
C1535	403 071 5408	CERAMIC	220P	J	50V
C1536	403 121 9509	CERAMIC	0.1U	Z	50V
C1537	403 121 3507	ELECT	4.7U	M	50V
C1538	403 001 1906	CERAMIC	0.01U	M	16V
C1539	403 001 1906	CERAMIC	0.01U	M	16V
C1540	403 001 1906	CERAMIC	0.01U	M	16V
C1541	403 001 1906	CERAMIC	0.01U	M	16V
C1542	403 001 1906	CERAMIC	0.01U	M	16V
C1543	403 001 1906	CERAMIC	0.01U	M	16V
C1544	403 001 1906	CERAMIC	0.01U	M	16V
C1545	403 163 7907	ELECT	47U	M	6.3V
C1546	403 073 6205	CERAMIC	470P	J	50V
C1547	403 001 1906	CERAMIC	0.01U	M	16V
C1548	403 001 1906	CERAMIC	0.01U	M	16V
C1549	403 001 1906	CERAMIC	0.01U	M	16V
C1550	403 001 2606	CERAMIC	0.1U	K	16V
C1551	403 001 1906	CERAMIC	0.01U	M	16V
C1552	403 001 1906	CERAMIC	0.01U	M	16V
C1553	403 001 1906	CERAMIC	0.01U	M	16V
C1554	403 001 1906	CERAMIC	0.01U	M	16V
C1555	403 121 9509	CERAMIC	0.1U	Z	50V
C1556	403 001 1906	CERAMIC	0.01U	M	16V
C1557	403 001 1906	CERAMIC	0.01U	M	16V
C1558	403 001 1906	CERAMIC	0.01U	M	16V
C1559	403 001 2606	CERAMIC	0.1U	K	16V
C1560	403 120 9005	CERAMIC	0.022U	J	16V
C1561	403 028 3402	CERAMIC	56P	J	50V
C1562	403 069 0309	CERAMIC	1000P	J	50V
C1563	403 025 7304	CERAMIC	4.7P	K	50V
C1564	403 001 1906	CERAMIC	0.01U	M	16V
C1566	403 075 3103	CERAMIC	82P	J	50V
C1569	403 069 0309	CERAMIC	1000P	J	50V
C1570	403 001 1906	CERAMIC	0.01U	M	16V
C1572	403 001 1906	CERAMIC	0.01U	M	16V
C1573	403 001 1906	CERAMIC	0.01U	M	16V
C1574	403 001 1906	CERAMIC	0.01U	M	16V
C1575	403 001 1906	CERAMIC	0.01U	M	16V
C1576	403 075 4001	CERAMIC	820P	J	50V
C1577	403 030 6309	CERAMIC	68P	J	50V
C1578	403 069 0309	CERAMIC	1000P	J	50V
C1579	403 001 1906	CERAMIC	0.01U	M	16V
C1580	403 068 8801	CERAMIC	100P	J	50V
C1601	403 001 1906	CERAMIC	0.01U	M	16V
C1604	403 001 1906	CERAMIC	0.01U	M	16V
C1605	403 001 1906	CERAMIC	0.01U	M	16V
C1606	403 001 1906	CERAMIC	0.01U	M	16V
C1607	403 001 1906	CERAMIC	0.01U	M	16V
C1608	403 068 8801	CERAMIC	100P	J	50V
C1609	403 059 3006	POLYESTER	2200P	J	50V
C1610	403 191 8709	ELECT	1U	M	50V
C1611	403 074 8703	CERAMIC	680P	J	50V
C1612	403 069 0309	CERAMIC	1000P	J	50V
C1613	403 001 1906	CERAMIC	0.01U	M	16V
C1614	403 001 1906	CERAMIC	0.01U	M	16V
C1615	403 001 1906	CERAMIC	0.01U	M	16V
C1616	403 001 1906	CERAMIC	0.01U	M	16V
C1617	403 109 6308	ELECT	1U	M	50V
C1618	403 191 8709	ELECT	1U	M	50V
C1619	403 012 6006	CERAMIC	15P	J	50V
C1620	403 001 1906	CERAMIC	0.01U	M	16V
C1621	403 135 4002	ELECT	47U	M	6.3V
C1622	403 001 1906	CERAMIC	0.01U	M	16V
C1623	403 001 7908	CERAMIC	0.047U	K	16V
C1624	403 001 7908	CERAMIC	0.047U	K	16V
C1625	403 109 6308	ELECT	1U	M	50V
C1626	403 001 1906	CERAMIC	0.01U	M	16V
C1627	403 135 4002	ELECT	47U	M	6.3V
C1628	403 001 1906	CERAMIC	0.01U	M	16V
C1629	403 107 9905	ELECT	10U	M	16V
C1630	403 107 9905	ELECT	10U	M	16V
C1631	403 001 1906	CERAMIC	0.01U	M	16V
C1632	403 135 4002	ELECT	47U	M	6.3V
C1633	403 001 1906	CERAMIC	0.01U	M	16V
C1634	403 109 6308	ELECT	1U	M	50V
C1635	403 001 7908	CERAMIC	0.047U	K	16V

LOCATION	PARTS NO.	DESCRIPTION			
C1636	403 001 7908	CERAMIC	0.047U	K	16V
C1637	403 001 1906	CERAMIC	0.01U	M	16V
C1638	403 135 4002	ELECT	47U	M	6.3V
C1639	403 001 1906	CERAMIC	0.01U	M	16V
C1640	403 012 6006	CERAMIC	15P	J	50V
C1641	403 109 6308	ELECT	1U	M	50V
C1642	403 109 6308	ELECT	1U	M	50V
C1643	403 001 1906	CERAMIC	0.01U	M	16V
C1644	403 001 1906	CERAMIC	0.01U	M	16V
C1645	403 001 1906	CERAMIC	0.01U	M	16V
C1646	403 001 1906	CERAMIC	0.01U	M	16V
C1647	403 069 0309	CERAMIC	1000P	J	50V
C1648	403 017 9705	CERAMIC	22P	J	50V
C1649	403 017 9705	CERAMIC	22P	J	50V
C1650	403 191 8709	ELECT	1U	M	50V
C1651	403 189 2405	ELECT	10U	M	16V
C1652	403 001 1906	CERAMIC	0.01U	M	16V
C1701	403 001 1906	CERAMIC	0.01U	M	16V
C1702	403 121 2401	ELECT	22U	M	16V
C1703	403 121 3408	ELECT	2.2U	M	50V
C1704	403 121 3408	ELECT	2.2U	M	50V
C1705	403 109 6308	ELECT	1U	M	50V
C1706	403 109 6308	ELECT	1U	M	50V
C1707	403 109 6308	ELECT	1U	M	50V
C1708	403 001 1906	CERAMIC	0.01U	M	16V
C1709	403 001 1906	CERAMIC	0.01U	M	16V
C1710	403 001 1906	CERAMIC	0.01U	M	16V
C1711	403 121 9509	CERAMIC	0.1U	Z	50V
C1712	403 121 9509	CERAMIC	0.1U	Z	50V
C1713	403 107 9905	ELECT	10U	M	16V
C1714	403 072 7500	CERAMIC	330P	J	50V
C1715	403 109 6308	ELECT	1U	M	50V
C1716	403 163 7907	ELECT	47U	M	6.3V
C1717	403 150 6500	ELECT	22U	M	16V
C1750	403 121 2401	ELECT	22U	M	16V
C1751	403 001 1906	CERAMIC	0.01U	M	16V
C1752	403 001 1906	CERAMIC	0.01U	M	16V
C1753	403 135 4002	ELECT	47U	M	6.3V
C1754	403 121 2401	ELECT	22U	M	16V
C1755	403 001 1906	CERAMIC	0.01U	M	16V
C1756	403 001 1906	CERAMIC	0.01U	M	16V
C1757	403 135 4002	ELECT	47U	M	6.3V
C1758	403 135 4002	ELECT	47U	M	6.3V
C1759	403 001 1906	CERAMIC	0.01U	M	16V
C1760	403 121 3408	ELECT	2.2U	M	50V
C1761	403 001 1906	CERAMIC	0.01U	M	16V
C1762	403 001 1906	CERAMIC	0.01U	M	16V
C1763	403 022 2005	CERAMIC	30P	J	50V
C1764	403 121 3507	ELECT	4.7U	M	50V
C1765	403 135 4002	ELECT	47U	M	6.3V
C1766	403 121 3507	ELECT	4.7U	M	50V
C1767	403 001 1906	CERAMIC	0.01U	M	16V
C1769	403 069 0309	CERAMIC	1000P	J	50V
C1770	403 073 2702	CERAMIC	390P	J	50V
C1771	403 001 1906	CERAMIC	0.01U	M	16V
C1772	403 189 2405	ELECT	10U	M	16V
C1773	403 191 8709	ELECT	1U	M	50V
C1774	403 191 8808	ELECT	2.2U	M	50V
C1775	403 109 6308	ELECT	1U	M	50V
C1776	403 191 8709	ELECT	1U	M	50V
C1777	403 191 8709	ELECT	1U	M	50V
C1778	403 193 9001	ELECT	3.3U	M	50V
C1779	403 001 1906	CERAMIC	0.01U	M	16V
C1780	403 189 2405	ELECT	10U	M	16V
C1781	403 072 9603	CERAMIC	3300P	K	50V
C1782	403 003 3700	CERAMIC	0.022U	Z	25V
C1783	403 191 8808	ELECT	2.2U	M	50V
C1784	403 150 6500	ELECT	22U	M	16V
C1785	403 001 1906	CERAMIC	0.01U	M	16V
C1786	403 107 9905	ELECT	10U	M	16V
C1787	403 001 1906	CERAMIC	0.01U	M	16V
C1788	403 009 1809	CERAMIC	10P	J	50V
C1789	403 139 0505	NP-ELECT	100U	M	6.3V

LOCATION	PARTS NO.	DESCRIPTION			
(RESISTORS)					
R1001	401 015 2605	CARBON	1.8K	JA	1/4W
R1002	401 013 5202	CARBON	1.2K	JA	1/4W
R1003	401 016 3700	CARBON	2.2K	JA	1/4W
R1004	401 012 5609	CARBON	1K	JA	1/4W
R1005	401 016 3700	CARBON	2.2K	JA	1/4W
R1006	401 012 5609	CARBON	1K	JA	1/4W
R1007	401 021 1807	CARBON	560	JA	1/4W
R1012	401 019 0904	CARBON	390	JA	1/4W
R1013	401 012 6903	CARBON	10K	JA	1/4W
R1014	401 012 6903	CARBON	10K	JA	1/4W
R1015	401 017 1705	CARBON	2.7K	JA	1/4W
R1016	401 012 8006	CARBON	100K	JA	1/4W
R1017	401 016 4707	CARBON	22K	JA	1/4W
R1018	401 020 2805	CARBON	47K	JA	1/4W
R1019	401 017 2702	CARBON	27K	JA	1/4W
R1020	401 019 2908	CARBON	39K	JA	1/4W
R1021	401 012 5609	CARBON	1K	JA	1/4W
R1022	401 022 5002	CARBON	680K	JA	1/4W
R1023	401 012 5609	CARBON	1K	JA	1/4W
R1024	401 012 5609	CARBON	1K	JA	1/4W
R1025	401 019 1802	CARBON	3.9K	JA	1/4W
R1026	401 019 1802	CARBON	3.9K	JA	1/4W
R1028	401 020 2805	CARBON	47K	JA	1/4W
R1029	401 016 7401	CARBON	240	JA	1/4W
R1030	401 015 9406	CARBON	2K	JA	1/4W
R1031	401 019 1802	CARBON	3.9K	JA	1/4W
R1032	401 018 5702	CARBON	330K	JA	1/4W
R1033	401 013 5202	CARBON	1.2K	JA	1/4W
R1034	401 015 2605	CARBON	1.8K	JA	1/4W
R1035	401 021 2903	CARBON	5.6K	JA	1/4W
R1036	401 013 6308	CARBON	12K	JA	1/4W
R1037	401 019 0904	CARBON	390	JA	1/4W
R1038	401 016 3700	CARBON	2.2K	JA	1/4W
R1039	401 021 1807	CARBON	560	JA	1/4W
R1040	401 012 6903	CARBON	10K	JA	1/4W
R1041	401 012 5609	CARBON	1K	JA	1/4W
R1042	401 012 5609	CARBON	1K	JA	1/4W
R1043	401 016 4707	CARBON	22K	JA	1/4W
R1044	401 016 4707	CARBON	22K	JA	1/4W
R1045	401 012 4404	CARBON	100	JA	1/4W
R1048	401 012 5609	CARBON	1K	JA	1/4W
R1049	401 020 0702	CARBON	470	JA	1/4W
R1050	401 012 4404	CARBON	100	JA	1/4W
R1051	401 012 4404	CARBON	100	JA	1/4W
R1052	401 016 3700	CARBON	2.2K	JA	1/4W
R1053	401 014 4006	CARBON	1.5K	JA	1/4W
R1054	401 012 4404	CARBON	100	JA	1/4W
R1055	401 012 4404	CARBON	100	JA	1/4W
R1056	401 012 5609	CARBON	1K	JA	1/4W
R1057	401 013 5202	CARBON	1.2K	JA	1/4W
R1058	401 021 1807	CARBON	560	JA	1/4W
R1059	401 012 5609	CARBON	1K	JA	1/4W
R1061	401 016 2505	CARBON	220	JA	1/4W
R1062	401 012 5609	CARBON	1K	JA	1/4W
R1063	401 016 2505	CARBON	220	JA	1/4W
R1064	401 016 3700	CARBON	2.2K	JA	1/4W
R1065	401 016 3700	CARBON	2.2K	JA	1/4W
R1066	401 012 5609	CARBON	1K	JA	1/4W
R1067	401 012 5609	CARBON	1K	JA	1/4W
R1068	401 012 5609	CARBON	1K	JA	1/4W
R1069	401 012 5609	CARBON	1K	JA	1/4W
R1070	401 016 3700	CARBON	2.2K	JA	1/4W
R1071	401 022 1806	CARBON	680	JA	1/4W
R1072	401 020 0702	CARBON	470	JA	1/4W
R1073	401 020 0702	CARBON	470	JA	1/4W
R1074	401 013 6308	CARBON	12K	JA	1/4W
R1075	401 012 6903	CARBON	10K	JA	1/4W
R1076	401 012 5609	CARBON	1K	JA	1/4W
R1077	401 012 5609	CARBON	1K	JA	1/4W
R1078	401 023 1607	CARBON	820	JA	1/4W
R1079	401 019 0904	CARBON	390	JA	1/4W
R1080	401 019 0904	CARBON	390	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1081	401 021 2903	CARBON	5.6K	JA	1/4W
R1082	401 019 1802	CARBON	3.9K	JA	1/4W
R1083	401 012 5609	CARBON	1K	JA	1/4W
R1084	401 018 3708	CARBON	3.3K	JA	1/4W
R1085	401 012 5609	CARBON	1K	JA	1/4W
R1086	401 012 5609	CARBON	1K	JA	1/4W
R1088	401 013 5202	CARBON	1.2K	JA	1/4W
R1089	401 012 5609	CARBON	1K	JA	1/4W
R1090	401 012 5609	CARBON	1K	JA	1/4W
R1091	401 020 0702	CARBON	470	JA	1/4W
R1092	401 019 0904	CARBON	390	JA	1/4W
R1093	401 020 0702	CARBON	470	JA	1/4W
R1094	401 012 5609	CARBON	1K	JA	1/4W
R1095	401 016 4707	CARBON	22K	JA	1/4W
R1096	401 012 6903	CARBON	10K	JA	1/4W
R1097	401 020 1907	CARBON	4.7K	JA	1/4W
R1098	401 013 5202	CARBON	1.2K	JA	1/4W
R1099	401 012 6903	CARBON	10K	JA	1/4W
R1100	401 016 4707	CARBON	22K	JA	1/4W
R1101	401 020 1907	CARBON	4.7K	JA	1/4W
R1102	401 020 2805	CARBON	47K	JA	1/4W
R1103	401 020 1907	CARBON	4.7K	JA	1/4W
R1104	401 012 5609	CARBON	1K	JA	1/4W
R1105	401 012 5609	CARBON	1K	JA	1/4W
R1106	401 019 0904	CARBON	390	JA	1/4W
R1107	401 012 5609	CARBON	1K	JA	1/4W
R1108	401 016 3700	CARBON	2.2K	JA	1/4W
R1109	401 023 1607	CARBON	820	JA	1/4W
R1110	401 016 3700	CARBON	2.2K	JA	1/4W
R1111	401 016 3700	CARBON	2.2K	JA	1/4W
R1112	401 016 3700	CARBON	2.2K	JA	1/4W
R1113	401 016 3700	CARBON	2.2K	JA	1/4W
R1114	401 022 1806	CARBON	680	JA	1/4W
R1115	401 019 0904	CARBON	390	JA	1/4W
R1116	401 012 5609	CARBON	1K	JA	1/4W
R1117	401 019 0904	CARBON	390	JA	1/4W
R1118	401 015 3701	CARBON	18K	JA	1/4W
R1119	401 017 2702	CARBON	27K	JA	1/4W
R1120	401 016 6404	CARBON	2.2M	JA	1/4W
R1121	401 023 3601	CARBON	82K	JA	1/4W
R1122	401 012 5609	CARBON	1K	JA	1/4W
R1123	401 019 0904	CARBON	390	JA	1/4W
R1124	401 012 5609	CARBON	1K	JA	1/4W
R1125	401 015 2605	CARBON	1.8K	JA	1/4W
R1126	401 016 3700	CARBON	2.2K	JA	1/4W
R1127	401 018 2701	CARBON	330	JA	1/4W
R1128	401 012 5609	CARBON	1K	JA	1/4W
R1129	401 017 1705	CARBON	2.7K	JA	1/4W
R1130	401 013 5202	CARBON	1.2K	JA	1/4W
R1131	401 012 5609	CARBON	1K	JA	1/4W
R1132	401 023 1607	CARBON	820	JA	1/4W
R1133	401 103 7406	CARBON	1K	GA	1/4W
R1134	401 103 7307	CARBON	470	GA	1/4W
R1135	401 103 7604	CARBON	3.3K	GA	1/4W
R1136	401 103 7406	CARBON	1K	GA	1/4W
R1137	401 014 4006	CARBON	1.5K	JA	1/4W
R1138	401 018 3708	CARBON	3.3K	JA	1/4W
R1139	401 012 5609	CARBON	1K	JA	1/4W
R1140	401 016 3700	CARBON	2.2K	JA	1/4W
R1141	401 019 1802	CARBON	3.9K	JA	1/4W
R1142	401 013 5202	CARBON	1.2K	JA	1/4W
R1143	401 017 0708	CARBON	270	JA	1/4W
R1144	401 022 4005	CARBON	68K	JA	1/4W
R1145	401 019 7705	CARBON	4.3K	JA	1/4W
R1146	401 021 4006	CARBON	56K	JA	1/4W
R1147	401 012 5609	CARBON	1K	JA	1/4W
R1150	401 013 5202	CARBON	1.2K	JA	1/4W
R1151	401 017 1705	CARBON	2.7K	JA	1/4W
R1152	401 023 2703	CARBON	8.2K	JA	1/4W
R1153	401 013 6308	CARBON	12K	JA	1/4W
R1155	401 012 8006	CARBON	100K	JA	1/4W
R1156	401 013 6308	CARBON	12K	JA	1/4W
R1157	401 012 9201	CARBON	1M	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1158	401 023 4509	CARBON	820K	JA	1/4W
R1159	401 018 2701	CARBON	330	JA	1/4W
R1160	401 018 3708	CARBON	3.3K	JA	1/4W
R1162	401 016 4707	CARBON	22K	JA	1/4W
R1163	401 021 2903	CARBON	5.6K	JA	1/4W
R1199	401 015 2605	CARBON	1.8K	JA	1/4W
R1201	401 012 4404	CARBON	100	JA	1/4W
R1202	401 022 0700	CARBON	68	JA	1/4W
R1203	401 012 4404	CARBON	100	JA	1/4W
R1204	401 016 3700	CARBON	2.2K	JA	1/4W
R1205	401 016 3700	CARBON	2.2K	JA	1/4W
R1206	401 012 4404	CARBON	100	JA	1/4W
R1207	401 022 0700	CARBON	68	JA	1/4W
R1208	401 022 0700	CARBON	68	JA	1/4W
R1209	401 012 4404	CARBON	100	JA	1/4W
R1210	401 016 3700	CARBON	2.2K	JA	1/4W
R1211	401 022 1806	CARBON	680	JA	1/4W
R1214	401 015 2605	CARBON	1.8K	JA	1/4W
R1215	401 016 3700	CARBON	2.2K	JA	1/4W
R1216	401 020 0702	CARBON	470	JA	1/4W
R1217	401 012 5609	CARBON	1K	JA	1/4W
R1218	401 016 7906	CARBON	2.4K	JA	1/4W
R1219	401 021 4006	CARBON	56K	JA	1/4W
R1220	401 022 4005	CARBON	68K	JA	1/4W
R1221	401 023 2703	CARBON	8.2K	JA	1/4W
R1222	401 022 1806	CARBON	680	JA	1/4W
R1223	401 017 1705	CARBON	2.7K	JA	1/4W
R1224	401 023 2703	CARBON	8.2K	JA	1/4W
R1225	401 012 5609	CARBON	1K	JA	1/4W
R1226	401 014 4006	CARBON	1.5K	JA	1/4W
R1227	401 013 5202	CARBON	1.2K	JA	1/4W
R1228	401 012 5609	CARBON	1K	JA	1/4W
R1229	401 012 5609	CARBON	1K	JA	1/4W
R1230	401 016 3700	CARBON	2.2K	JA	1/4W
R1231	401 016 3700	CARBON	2.2K	JA	1/4W
R1232	401 022 8508	CARBON	750K	JA	1/4W
R1233	401 012 6903	CARBON	10K	JA	1/4W
R1235	401 012 5609	CARBON	1K	JA	1/4W
R1301	401 020 0702	CARBON	470	JA	1/4W
R1302	401 012 4404	CARBON	100	JA	1/4W
R1303	401 012 6903	CARBON	10K	JA	1/4W
R1304	401 012 4404	CARBON	100	JA	1/4W
R1305	401 016 6404	CARBON	2.2M	JA	1/4W
R1306	401 012 6903	CARBON	10K	JA	1/4W
R1307	401 018 2701	CARBON	330	JA	1/4W
R1308	401 012 6903	CARBON	10K	JA	1/4W
R1309	401 012 6903	CARBON	10K	JA	1/4W
R1310	401 012 4404	CARBON	100	JA	1/4W
R1311	401 016 3700	CARBON	2.2K	JA	1/4W
R1312	401 016 3700	CARBON	2.2K	JA	1/4W
R1313	401 012 4404	CARBON	100	JA	1/4W
R1314	401 012 6903	CARBON	10K	JA	1/4W
R1315	401 012 6903	CARBON	10K	JA	1/4W
R1316	401 018 3708	CARBON	3.3K	JA	1/4W
R1317	401 019 1802	CARBON	3.9K	JA	1/4W
R1318	401 021 4006	CARBON	56K	JA	1/4W
R1319	401 015 2605	CARBON	1.8K	JA	1/4W
R1320	401 021 1807	CARBON	560	JA	1/4W
R1321	401 023 1607	CARBON	820	JA	1/4W
R1322	401 013 5202	CARBON	1.2K	JA	1/4W
R1323	401 023 1607	CARBON	820	JA	1/4W
R1324	401 023 1607	CARBON	820	JA	1/4W
R1325	401 015 3701	CARBON	18K	JA	1/4W
R1326	401 014 5102	CARBON	15K	JA	1/4W
R1327	401 021 1807	CARBON	560	JA	1/4W
R1328	401 012 5609	CARBON	1K	JA	1/4W
R1329	401 016 3700	CARBON	2.2K	JA	1/4W
R1330	401 021 1807	CARBON	560	JA	1/4W
R1331	401 012 5609	CARBON	1K	JA	1/4W
R1332	401 012 5609	CARBON	1K	JA	1/4W
R1333	401 012 5609	CARBON	1K	JA	1/4W
R1334	401 016 7401	CARBON	240	JA	1/4W
R1335	401 012 5609	CARBON	1K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1336	401 019 2908	CARBON	39K	JA	1/4W
R1337	401 015 3701	CARBON	18K	JA	1/4W
R1338	401 020 0702	CARBON	470	JA	1/4W
R1339	401 016 3700	CARBON	2.2K	JA	1/4W
R1340	401 016 3700	CARBON	2.2K	JA	1/4W
R1341	401 021 1807	CARBON	560	JA	1/4W
R1342	401 018 2701	CARBON	330	JA	1/4W
R1344	401 016 3700	CARBON	2.2K	JA	1/4W
R1345	401 016 6404	CARBON	2.2M	JA	1/4W
R1346	401 014 2804	CARBON	150	JA	1/4W
R1347	401 016 6404	CARBON	2.2M	JA	1/4W
R1348	401 013 4106	CARBON	120	JA	1/4W
R1349	401 023 3601	CARBON	82K	JA	1/4W
R1350	401 019 2908	CARBON	39K	JA	1/4W
R1351	401 012 6903	CARBON	10K	JA	1/4W
R1352	401 013 4106	CARBON	120	JA	1/4W
R1353	401 013 5202	CARBON	1.2K	JA	1/4W
R1354	401 012 5609	CARBON	1K	JA	1/4W
R1355	401 023 2703	CARBON	8.2K	JA	1/4W
R1356	401 012 6903	CARBON	10K	JA	1/4W
R1357	401 013 9408	CARBON	1.3K	JA	1/4W
R1358	401 022 1806	CARBON	680	JA	1/4W
R1359	401 020 0702	CARBON	470	JA	1/4W
R1360	401 019 7200	CARBON	430	JA	1/4W
R1361	401 022 1806	CARBON	680	JA	1/4W
R1362	401 012 5609	CARBON	1K	JA	1/4W
R1363	401 012 5609	CARBON	1K	JA	1/4W
R1364	401 012 4404	CARBON	100	JA	1/4W
R1365	401 016 3700	CARBON	2.2K	JA	1/4W
R1366	401 016 2505	CARBON	220	JA	1/4W
R1367	401 014 4006	CARBON	1.5K	JA	1/4W
R1368	401 012 4404	CARBON	100	JA	1/4W
R1369	401 012 6903	CARBON	10K	JA	1/4W
R1370	401 012 6903	CARBON	10K	JA	1/4W
R1371	401 012 6903	CARBON	10K	JA	1/4W
R1372	401 012 6903	CARBON	10K	JA	1/4W
R1373	401 014 4006	CARBON	1.5K	JA	1/4W
R1374	401 012 4404	CARBON	100	JA	1/4W
R1375	401 012 4404	CARBON	100	JA	1/4W
R1399	401 014 2804	CARBON	150	JA	1/4W
R1401	401 016 4707	CARBON	22K	JA	1/4W
R1402	401 012 5609	CARBON	1K	JA	1/4W
R1403	401 012 5609	CARBON	1K	JA	1/4W
R1404	401 012 4404	CARBON	100	JA	1/4W
R1405	401 012 5609	CARBON	1K	JA	1/4W
R1406	401 020 1907	CARBON	4.7K	JA	1/4W
R1407	401 022 0700	CARBON	68	JA	1/4W
R1408	401 014 2804	CARBON	150	JA	1/4W
R1409	401 013 5202	CARBON	1.2K	JA	1/4W
R1410	401 013 5202	CARBON	1.2K	JA	1/4W
R1411	401 013 5202	CARBON	1.2K	JA	1/4W
R1412	401 013 5202	CARBON	1.2K	JA	1/4W
R1413	401 022 0700	CARBON	68	JA	1/4W
R1414	401 022 0700	CARBON	68	JA	1/4W
R1415	401 022 0700	CARBON	68	JA	1/4W
R1416	401 020 1907	CARBON	4.7K	JA	1/4W
R1417	401 018 4804	CARBON	33K	JA	1/4W
R1418	401 016 4707	CARBON	22K	JA	1/4W
R1419	401 018 4804	CARBON	33K	JA	1/4W
R1420	401 012 5609	CARBON	1K	JA	1/4W
R1421	401 019 1802	CARBON	3.9K	JA	1/4W
R1422	401 012 6903	CARBON	10K	JA	1/4W
R1423	401 022 1806	CARBON	680	JA	1/4W
R1424	401 019 1802	CARBON	3.9K	JA	1/4W
R1425	401 016 4707	CARBON	22K	JA	1/4W
R1426	401 018 4804	CARBON	33K	JA	1/4W
R1427	401 012 8006	CARBON	100K	JA	1/4W
R1428	401 015 3701	CARBON	18K	JA	1/4W
R1429	401 014 7106	CARBON	1.5M	JA	1/4W
R1430	401 014 4006	CARBON	1.5K	JA	1/4W
R1431	401 018 2701	CARBON	330	JA	1/4W
R1432	401 016 3700	CARBON	2.2K	JA	1/4W
R1433	401 014 4006	CARBON	1.5K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1434	401 012 5609	CARBON	1K	JA	1/4W
R1435	401 021 2903	CARBON	5.6K	JA	1/4W
R1436	401 019 1802	CARBON	3.9K	JA	1/4W
R1437	401 012 6903	CARBON	10K	JA	1/4W
R1438	401 018 4804	CARBON	33K	JA	1/4W
R1439	401 018 2701	CARBON	330	JA	1/4W
R1440	401 016 5704	CARBON	220K	JA	1/4W
R1441	401 014 7106	CARBON	1.5M	JA	1/4W
R1442	401 020 0702	CARBON	470	JA	1/4W
R1443	401 017 2702	CARBON	27K	JA	1/4W
R1444	401 014 5102	CARBON	15K	JA	1/4W
R1445	401 018 5702	CARBON	330K	JA	1/4W
R1446	401 017 3709	CARBON	270K	JA	1/4W
R1447	401 012 8006	CARBON	100K	JA	1/4W
R1448	401 012 8006	CARBON	100K	JA	1/4W
R1449	401 019 1802	CARBON	3.9K	JA	1/4W
R1450	401 014 8509	CARBON	1.6K	JA	1/4W
R1451	401 018 2701	CARBON	330	JA	1/4W
R1452	401 016 2505	CARBON	220	JA	1/4W
R1453	401 020 1907	CARBON	4.7K	JA	1/4W
R1454	401 014 4006	CARBON	1.5K	JA	1/4W
R1455	401 012 6903	CARBON	10K	JA	1/4W
R1456	401 014 7106	CARBON	1.5M	JA	1/4W
R1457	401 021 2903	CARBON	5.6K	JA	1/4W
R1458	401 021 2903	CARBON	5.6K	JA	1/4W
R1459	401 021 2903	CARBON	5.6K	JA	1/4W
R1460	401 023 2703	CARBON	8.2K	JA	1/4W
R1461	401 021 2903	CARBON	5.6K	JA	1/4W
R1462	401 014 5102	CARBON	15K	JA	1/4W
R1463	401 013 6308	CARBON	12K	JA	1/4W
R1464	401 013 6308	CARBON	12K	JA	1/4W
R1465	401 016 3700	CARBON	2.2K	JA	1/4W
R1466	401 020 0702	CARBON	470	JA	1/4W
R1467	401 020 0702	CARBON	470	JA	1/4W
R1468	401 018 2701	CARBON	330	JA	1/4W
R1469	401 018 2701	CARBON	330	JA	1/4W
R1470	401 012 5609	CARBON	1K	JA	1/4W
R1471	401 018 3708	CARBON	3.3K	JA	1/4W
R1472	401 022 3008	CARBON	6.8K	JA	1/4W
R1473	401 013 5202	CARBON	1.2K	JA	1/4W
R1474	401 012 5609	CARBON	1K	JA	1/4W
R1475	401 012 5609	CARBON	1K	JA	1/4W
R1476	401 012 5609	CARBON	1K	JA	1/4W
R1477	401 021 4907	CARBON	560K	JA	1/4W
R1478	401 020 0702	CARBON	470	JA	1/4W
R1479	401 107 8003	MT-FILM	130K	FD	1/4W
R1480	401 016 3700	CARBON	2.2K	JA	1/4W
R1481	401 012 6903	CARBON	10K	JA	1/4W
R1482	401 020 3802	CARBON	470K	JA	1/4W
R1483	401 020 0702	CARBON	470	JA	1/4W
R1484	401 116 5109	CARBON	2.2K	GA	1/4W
R1485	401 116 5109	CARBON	2.2K	GA	1/4W
R1486	401 021 4006	CARBON	56K	JA	1/4W
R1487	401 021 1807	CARBON	560	JA	1/4W
R1488	401 013 5202	CARBON	1.2K	JA	1/4W
R1489	401 016 3700	CARBON	2.2K	JA	1/4W
R1490	401 012 4404	CARBON	100	JA	1/4W
R1491	401 012 6903	CARBON	10K	JA	1/4W
R1492	401 012 5609	CARBON	1K	JA	1/4W
R1493	401 012 4404	CARBON	100	JA	1/4W
R1494	401 012 4404	CARBON	100	JA	1/4W
R1497	401 012 5609	CARBON	1K	JA	1/4W
R1498	401 012 5609	CARBON	1K	JA	1/4W
R1501	401 012 5609	CARBON	1K	JA	1/4W
R1502	401 014 2804	CARBON	150	JA	1/4W
R1503	401 016 3700	CARBON	2.2K	JA	1/4W
R1504	401 012 5609	CARBON	1K	JA	1/4W
R1505	401 020 1907	CARBON	4.7K	JA	1/4W
R1506	401 016 3700	CARBON	2.2K	JA	1/4W
R1507	401 013 5202	CARBON	1.2K	JA	1/4W
R1508	401 012 5609	CARBON	1K	JA	1/4W
R1509	401 021 1807	CARBON	560	JA	1/4W
R1510	401 018 2701	CARBON	330	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1511	401 016 3700	CARBON	2.2K	JA	1/4W
R1512	401 012 4404	CARBON	100	JA	1/4W
R1513	401 022 1806	CARBON	680	JA	1/4W
R1516	401 021 1807	CARBON	560	JA	1/4W
R1517	401 023 1607	CARBON	820	JA	1/4W
R1520	401 012 5609	CARBON	1K	JA	1/4W
R1521	401 019 2908	CARBON	39K	JA	1/4W
R1522	401 019 2908	CARBON	39K	JA	1/4W
R1523	401 020 0702	CARBON	470	JA	1/4W
R1524	401 014 4006	CARBON	1.5K	JA	1/4W
R1525	401 020 0702	CARBON	470	JA	1/4W
R1526	401 012 5609	CARBON	1K	JA	1/4W
R1527	401 018 3708	CARBON	3.3K	JA	1/4W
R1528	401 012 5609	CARBON	1K	JA	1/4W
R1529	401 016 3700	CARBON	2.2K	JA	1/4W
R1530	401 018 4804	CARBON	33K	JA	1/4W
R1531	401 021 4006	CARBON	56K	JA	1/4W
R1532	401 012 5609	CARBON	1K	JA	1/4W
R1533	401 020 0702	CARBON	470	JA	1/4W
R1534	401 022 1806	CARBON	680	JA	1/4W
R1535	401 023 2703	CARBON	8.2K	JA	1/4W
R1536	401 022 4005	CARBON	68K	JA	1/4W
R1537	401 019 2908	CARBON	39K	JA	1/4W
R1538	401 012 5609	CARBON	1K	JA	1/4W
R1539	401 012 5609	CARBON	1K	JA	1/4W
R1540	401 012 5609	CARBON	1K	JA	1/4W
R1541	401 016 4707	CARBON	22K	JA	1/4W
R1542	401 016 4707	CARBON	22K	JA	1/4W
R1543	401 016 3700	CARBON	2.2K	JA	1/4W
R1544	401 017 1705	CARBON	2.7K	JA	1/4W
R1545	401 020 0702	CARBON	470	JA	1/4W
R1546	401 020 0702	CARBON	470	JA	1/4W
R1547	401 013 6308	CARBON	12K	JA	1/4W
R1548	401 023 2703	CARBON	8.2K	JA	1/4W
R1549	401 015 3701	CARBON	18K	JA	1/4W
R1550	401 016 4707	CARBON	22K	JA	1/4W
R1551	401 016 4707	CARBON	22K	JA	1/4W
R1552	401 016 4707	CARBON	22K	JA	1/4W
R1553	401 016 4707	CARBON	22K	JA	1/4W
R1554	401 016 4707	CARBON	22K	JA	1/4W
R1555	401 013 5202	CARBON	1.2K	JA	1/4W
R1556	401 020 0702	CARBON	470	JA	1/4W
R1557	401 012 5609	CARBON	1K	JA	1/4W
R1558	401 021 4006	CARBON	56K	JA	1/4W
R1559	401 018 4804	CARBON	33K	JA	1/4W
R1560	401 107 1202	MT-FILM	820	FD	1/4W
R1561	401 018 2701	CARBON	330	JA	1/4W
R1562	401 013 7206	CARBON	120K	JA	1/4W
R1563	401 019 2908	CARBON	39K	JA	1/4W
R1564	401 019 1802	CARBON	3.9K	JA	1/4W
R1565	401 015 2605	CARBON	1.8K	JA	1/4W
R1566	401 015 3701	CARBON	18K	JA	1/4W
R1567	401 016 3700	CARBON	2.2K	JA	1/4W
R1568	401 020 0702	CARBON	470	JA	1/4W
R1569	401 022 0700	CARBON	68	JA	1/4W
R1570	401 022 0700	CARBON	68	JA	1/4W
R1571	401 012 5609	CARBON	1K	JA	1/4W
R1572	401 012 5609	CARBON	1K	JA	1/4W
R1601	401 019 8207	CARBON	43K	JA	1/4W
R1602	401 019 8207	CARBON	43K	JA	1/4W
R1603	401 012 4404	CARBON	100	JA	1/4W
R1604	401 018 2701	CARBON	330	JA	1/4W
R1605	401 018 2701	CARBON	330	JA	1/4W
R1606	401 020 0702	CARBON	470	JA	1/4W
R1607	401 020 0702	CARBON	470	JA	1/4W
R1608	401 020 1907	CARBON	4.7K	JA	1/4W
R1609	401 012 5609	CARBON	1K	JA	1/4W
R1610	401 020 0702	CARBON	470	JA	1/4W
R1611	401 020 1907	CARBON	4.7K	JA	1/4W
R1612	401 012 5609	CARBON	1K	JA	1/4W
R1613	401 020 3802	CARBON	470K	JA	1/4W
R1614	401 012 6903	CARBON	10K	JA	1/4W
R1615	401 107 8003	MT-FILM	130K	FD	1/4W
R1616	401 020 0702	CARBON	470	JA	1/4W
R1617	401 021 4907	CARBON	560K	JA	1/4W
R1618	401 012 5609	CARBON	1K	JA	1/4W
R1619	401 016 0006	CARBON	20K	JA	1/4W
R1620	401 012 6903	CARBON	10K	JA	1/4W
R1621	401 012 9201	CARBON	1M	JA	1/4W
R1622	401 013 1808	CARBON	11K	JA	1/4W
R1623	401 020 3802	CARBON	470K	JA	1/4W
R1624	401 019 0904	CARBON	390	JA	1/4W
R1625	401 021 0602	CARBON	56	JA	1/4W
R1626	401 014 4006	CARBON	1.5K	JA	1/4W
R1627	401 016 3700	CARBON	2.2K	JA	1/4W
R1628	401 013 7206	CARBON	120K	JA	1/4W
R1629	401 013 7206	CARBON	120K	JA	1/4W
R1630	401 016 3700	CARBON	2.2K	JA	1/4W
R1631	401 014 4006	CARBON	1.5K	JA	1/4W
R1632	401 021 0602	CARBON	56	JA	1/4W
R1633	401 019 0904	CARBON	390	JA	1/4W
R1634	401 020 3802	CARBON	470K	JA	1/4W
R1635	401 013 1808	CARBON	11K	JA	1/4W
R1636	401 012 9201	CARBON	1M	JA	1/4W
R1637	401 012 6903	CARBON	10K	JA	1/4W
R1638	401 016 0006	CARBON	20K	JA	1/4W
R1639	401 012 5609	CARBON	1K	JA	1/4W
R1701	401 016 3700	CARBON	2.2K	JA	1/4W
R1702	401 012 4404	CARBON	100	JA	1/4W
R1703	401 012 4404	CARBON	100	JA	1/4W
R1704	401 022 0700	CARBON	68	JA	1/4W
R1705	401 016 3700	CARBON	2.2K	JA	1/4W
R1706	401 016 3700	CARBON	2.2K	JA	1/4W
R1707	401 016 3700	CARBON	2.2K	JA	1/4W
R1708	401 021 0602	CARBON	56	JA	1/4W
R1709	401 012 4404	CARBON	100	JA	1/4W
R1710	401 022 0700	CARBON	68	JA	1/4W
R1711	401 016 3700	CARBON	2.2K	JA	1/4W
R1712	401 012 6903	CARBON	10K	JA	1/4W
R1713	401 012 6903	CARBON	10K	JA	1/4W
R1714	401 012 6903	CARBON	10K	JA	1/4W
R1715	401 012 6903	CARBON	10K	JA	1/4W
R1716	401 018 3708	CARBON	3.3K	JA	1/4W
R1717	401 012 4404	CARBON	100	JA	1/4W
R1718	401 020 2805	CARBON	47K	JA	1/4W
R1719	401 020 3802	CARBON	470K	JA	1/4W
R1720	401 016 6404	CARBON	2.2M	JA	1/4W
R1721	401 016 6404	CARBON	2.2M	JA	1/4W
R1722	401 016 5704	CARBON	220K	JA	1/4W
R1723	401 020 0702	CARBON	470	JA	1/4W
R1724	401 016 3700	CARBON	2.2K	JA	1/4W
R1725	401 012 5609	CARBON	1K	JA	1/4W
R1726	401 020 0702	CARBON	470	JA	1/4W
R1727	401 018 3708	CARBON	3.3K	JA	1/4W
R1728	401 022 1806	CARBON	680	JA	1/4W
R1729	401 022 4005	CARBON	68K	JA	1/4W
R1730	401 012 8006	CARBON	100K	JA	1/4W
R1731	401 020 0702	CARBON	470	JA	1/4W
R1750	401 012 4404	CARBON	100	JA	1/4W
R1751	401 016 4707	CARBON	22K	JA	1/4W
R1752	401 012 5609	CARBON	1K	JA	1/4W
R1753	401 012 5609	CARBON	1K	JA	1/4W
R1754	401 012 4404	CARBON	100	JA	1/4W
R1756	401 012 5609	CARBON	1K	JA	1/4W
R1757	401 012 5609	CARBON	1K	JA	1/4W
R1758	401 012 6903	CARBON	10K	JA	1/4W
R1759	401 012 6903	CARBON	10K	JA	1/4W
R1760	401 013 5202	CARBON	1.2K	JA	1/4W
R1761	401 016 3700	CARBON	2.2K	JA	1/4W
R1762	401 021 4907	CARBON	560K	JA	1/4W
R1763	401 018 7508	CARBON	360	JA	1/4W
R1764	401 019 7705	CARBON	4.3K	JA	1/4W
R1765	401 014 5102	CARBON	15K	JA	1/4W
R1766	401 018 3708	CARBON	3.3K	JA	1/4W
R1767	401 012 4404	CARBON	100	JA	1/4W
R1768	401 016 3700	CARBON	2.2K	JA	1/4W
R1769	401 016 3700	CARBON	2.2K	JA	1/4W
R1770	401 016 4707	CARBON	22K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R1771	401 016 4707	CARBON	22K	JA	1/4W
R1772	401 014 4006	CARBON	1.5K	JA	1/4W
R1773	401 013 5202	CARBON	1.2K	JA	1/4W
R1774	401 014 4006	CARBON	1.5K	JA	1/4W
R1775	401 012 4404	CARBON	100	JA	1/4W
R1776	401 012 6903	CARBON	10K	JA	1/4W
R1777	401 014 4006	CARBON	1.5K	JA	1/4W
R1778	401 015 2605	CARBON	1.8K	JA	1/4W
R1779	401 014 4006	CARBON	1.5K	JA	1/4W
R1781	401 021 2903	CARBON	5.6K	JA	1/4W
R1782	401 016 4707	CARBON	22K	JA	1/4W
R1783	401 012 6903	CARBON	10K	JA	1/4W
R1784	401 016 6404	CARBON	2.2M	JA	1/4W
R1785	401 016 6404	CARBON	2.2M	JA	1/4W
R1786	401 012 4404	CARBON	100	JA	1/4W
R1787	401 013 5202	CARBON	1.2K	JA	1/4W

(THERMISTOR)

TH131	407 140 4507	THERMISTOR TD5-C210DB

COMPL PWB,PW-1

COMPLNO.613 162 2319

(SEMICONDUCTORS)

Q5101	405 043 6000	TR 2SC3807
Q5102	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 019 2005	TR 2SC536-E-SPA
OR	405 019 2807	TR 2SC536-F-SPA
Q5104	405 006 6504	TR 2SA984-E
OR	405 006 6702	TR 2SA984-F
Q5105	405 000 3103	TR DTC114ES
OR	405 018 2808	TR 2SC3402
Q5106	405 006 6504	TR 2SA984-E
OR	405 006 6702	TR 2SA984-F
Q5109	405 013 6801	TR 2SC2274-E
OR	405 013 7006	TR 2SC2274-F
Q5112	405 023 5009	TR 2SD400-E-MP
OR	405 023 5306	TR 2SD400-F-MP
Q5113	405 023 5009	TR 2SD400-E-MP
OR	405 023 5306	TR 2SD400-F-MP
Q5141	405 000 3103	TR DTC114ES
OR	405 018 2808	TR 2SC3402
Q5751	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 019 2005	TR 2SC536-E-SPA
OR	405 019 2807	TR 2SC536-F-SPA
Q5752	405 004 4007	TR 2SA608-E-SPA
OR	405 004 4601	TR 2SA608-F-SPA
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q5753	405 016 0905	TR 2SC2839-E-SPA
OR	405 016 1100	TR 2SC2839-F-SPA
Q5754	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
Q5755	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q5756	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
Q5758	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q5759	405 000 3103	TR DTC114ES
OR	405 018 2808	TR 2SC3402

(INTEGRATED CIRCUITS)

IC501	409 345 2302	IC STR-M6548
IC511	409 067 7203	IC L5431
IC512	409 067 7203	IC L5431
IC513	409 067 7203	IC L5431
IC514	409 248 5905	IC L88MS05T-FA

(DIODES)

LOCATION	PARTS NO.	DESCRIPTION
D5001	407 107 8005	DIODE RBV406
D5002	407 091 6704	DIODE AP01C
D5003	407 078 2705	DIODE 1SS244
D5004	407 100 0303	ZENER DIODE MTZJ36B
D5005	407 100 0303	ZENER DIODE MTZJ36B
D5013 ⚠	407 151 3308	PHOTO COUPLE PC120FB
D5101	407 119 0400	DIODE ERC62M-004
D5102	407 159 1306	DIODE YG912S2
D5103	407 158 1505	DIODE ERC30-02L38
D5104	407 078 2705	DIODE 1SS244
D5105	407 129 2005	DIODE RL2Z-LF-B1
D5107	407 120 6309	ZENER DIODE MTZJ3.3A
D5108	407 063 9009	ZENER DIODE MTZJ6.2A
D5109	407 099 6805	ZENER DIODE MTZJ13B
D5110	407 099 6805	ZENER DIODE MTZJ13B
D5111	407 063 8903	ZENER DIODE MTZJ5.6C
D5113	407 100 6909	DIODE AG01
OR	407 091 6902	DIODE ERA38-04
D5114	407 099 6805	ZENER DIODE MTZJ13B
D5116	407 063 8408	ZENER DIODE MTZJ12C
D5120	407 100 6909	DIODE AG01
OR	407 091 6902	DIODE ERA38-04

(INDUCTORS)

L5001 ⚠	645 000 9723	LINE FILTER
OR ⚠	645 002 7239	LINE FILTER
L5002	645 006 3602	INDUCTOR,1.1UH
L5101	645 002 4122	INDUCTOR,10U K
L5103	613 014 6830	HF CHOKE 150UHK
L5104	613 014 6830	HF CHOKE 150UHK
L5751	645 002 1411	INDUCTOR 10U J
OR	645 003 7894	INDUCTOR,10U J
L5752	645 002 1480	INDUCTOR 5.6U J
OR	645 003 8167	INDUCTOR,5.6U J
L5753	645 006 3886	INDUCTOR,1U K
OR	645 005 3856	INDUCTOR,1U M

(TRANSFORMER)

T5001 ⚠	645 009 6617	TRANS,POWER,PULSE

(CAPACITORS)

C5001 ⚠	404 070 4201	MT-POLYEST	0.068U	M	250V
C5002 ⚠	404 070 4201	MT-POLYEST	0.068U	M	250V
C5004 ⚠	404 034 6203	CERAMIC	470P	K	400V
C5005 ⚠	404 034 6302	CERAMIC	1000P	K	400V
C5007 ⚠	404 034 6302	CERAMIC	1000P	K	400V
C5010	403 286 4609	ELECT	82U	M	400V
C5011	403 137 5007	CERAMIC	100P	K	1K
C5013	403 155 5706	ELECT	47U	M	35V
C5014	403 076 8800	CERAMIC	220P	K	1K
C5015	403 071 7501	CERAMIC	2200P	K	50V
C5022	403 076 2402	CERAMIC	3300P	K	500V
C5101	403 096 6404	OS-SOLID	220U	M	10V
C5102	403 126 4806	ELECT	3300U	M	10V
C5103	403 126 4806	ELECT	3300U	M	10V
C5104	403 094 3405	OS-SOLID	100U	M	20V
C5105	403 134 6403	ELECT	2200U	M	16V
C5106	403 134 6403	ELECT	2200U	M	16V
C5107	403 147 9606	ELECT	1000U	M	10V
C5108	403 148 2002	ELECT	470U	M	35V
C5109	403 155 5706	ELECT	47U	M	35V
C5111	403 184 9102	MT-POLYEST	0.033U	J	50V
C5112	403 057 2902	POLYESTER	0.1U	K	50V
C5113	403 057 2902	POLYESTER	0.1U	K	50V
C5115	403 248 1608	ELECT	47U	M	16V
C5116	403 248 2902	ELECT	47U	M	6.3V
C5117	403 248 3107	ELECT	3.3U	M	50V
C5118	403 248 1608	ELECT	47U	M	16V
C5119	403 248 1608	ELECT	47U	M	16V
C5121	403 154 8302	ELECT	47U	M	50V
C5122	403 248 3107	ELECT	3.3U	M	50V
C5123	403 233 0609	ELECT	47U	M	25V
C5128	403 248 1400	ELECT	1U	M	50V
C5129	403 248 2902	ELECT	47U	M	6.3V

LOCATION	PARTS NO.	DESCRIPTION			
C5131	403 194 4609	ELECT	470U	M	16V
C5132	403 248 1608	ELECT	47U	M	16V
C5134	403 248 2902	ELECT	47U	M	6.3V
C5135	403 057 2902	POLYESTER	0.1U	K	50V
C5137	403 232 9801	ELECT	330U	M	6.3V
C5151	403 248 1400	ELECT	1U	M	50V
C5152	403 258 2602	ELECT	100U	M	6.3V
C5700	403 001 2606	CERAMIC	0.1U	K	16V
C5751	403 093 9606	OS-SOLID	1U	M	16V
C5752	403 001 1906	CERAMIC	0.01U	M	16V
C5753	403 121 9509	CERAMIC	0.1U	Z	50V
C5754	403 003 7104	CERAMIC	0.033U	M	25V
C5755	403 070 3702	CERAMIC	120P	J	50V
C5756	403 069 1207	CERAMIC	1000P	K	50V
C5757	403 019 7303	CERAMIC	27P	J	50V
C5758	403 121 9509	CERAMIC	0.1U	Z	50V
C5759	403 012 6006	CERAMIC	15P	J	50V
C5760	403 001 1906	CERAMIC	0.01U	M	16V
C5761	403 001 1906	CERAMIC	0.01U	M	16V
C5762	403 001 1906	CERAMIC	0.01U	M	16V
C5763	403 001 1906	CERAMIC	0.01U	M	16V
(RESISTORS)					
R5002	402 069 0401	SOLID	2.7M	KA	1/2W
R5010	401 064 1307	OXIDE-MT	0.33	JA	2W
R5011	401 015 6405	CARBON	2.2	JA	1/4W
R5012	401 015 4609	CARBON	180K	JA	1/4W
R5013	401 015 4609	CARBON	180K	JA	1/4W
R5014	401 232 1405	OXIDE-MT	68K	JA	2W
R5016	401 063 5207	OXIDE-MT	82	JA	1W
R5101	401 018 2701	CARBON	330	JA	1/4W
R5102	401 107 1202	MT-FILM	820	FD	1/4W
R5103	401 107 5200	MT-FILM	560	FD	1/4W
R5104	401 023 7401	CARBON	9.1K	JA	1/4W
R5116	401 015 2605	CARBON	1.8K	JA	1/4W
R5117	401 017 1705	CARBON	2.7K	JA	1/4W
R5118	401 019 6104	CARBON	4.7	JA	1/4W
R5119	401 014 4006	CARBON	1.5K	JA	1/4W
R5120	401 107 1400	MT-FILM	1K	FD	1/4W
R5121	401 107 5804	MT-FILM	1.2K	FD	1/4W
R5122	401 012 5609	CARBON	1K	JA	1/4W
R5123	401 107 1400	MT-FILM	1K	FD	1/4W
R5124	401 107 1400	MT-FILM	1K	FD	1/4W
R5125	401 015 2605	CARBON	1.8K	JA	1/4W
R5126	401 016 3700	CARBON	2.2K	JA	1/4W
R5130	401 021 2903	CARBON	5.6K	JA	1/4W
R5131	401 014 4006	CARBON	1.5K	JA	1/4W
R5134	401 013 5202	CARBON	1.2K	JA	1/4W
R5137	401 020 1907	CARBON	4.7K	JA	1/4W
R5138	401 107 6009	MT-FILM	1.6K	FD	1/4W
R5139	401 107 1608	MT-FILM	1.5K	FD	1/4W
R5142	401 015 2605	CARBON	1.8K	JA	1/4W
R5146	401 013 5202	CARBON	1.2K	JA	1/4W
R5147	401 013 5202	CARBON	1.2K	JA	1/4W
R5148	401 015 2605	CARBON	1.8K	JA	1/4W
R5149	401 014 4006	CARBON	1.5K	JA	1/4W
R5150	401 020 2805	CARBON	47K	JA	1/4W
R5151	401 016 4707	CARBON	22K	JA	1/4W
R5152	401 015 2605	CARBON	1.8K	JA	1/4W
R5155	401 011 9905	CARBON	1.2	JA	1/4W
R5156	401 016 1201	CARBON	22	JB	1/4W
R5751	401 017 0708	CARBON	270	JA	1/4W
R5752	401 012 6903	CARBON	10K	JA	1/4W
R5753	401 014 4006	CARBON	1.5K	JA	1/4W
R5754	401 018 4804	CARBON	33K	JA	1/4W
R5755	401 015 3701	CARBON	18K	JA	1/4W
R5756	401 018 1506	CARBON	33	JA	1/4W
R5757	401 013 5202	CARBON	1.2K	JA	1/4W
R5758	401 013 6308	CARBON	12K	JA	1/4W
R5759	401 016 4707	CARBON	22K	JA	1/4W
R5760	401 013 5202	CARBON	1.2K	JA	1/4W
R5761	401 018 2701	CARBON	330	JA	1/4W
R5762	401 023 0600	CARBON	82	JA	1/4W
R5763	401 018 2701	CARBON	330	JA	1/4W
R5764	401 012 5609	CARBON	1K	JA	1/4W
R5765	401 020 1907	CARBON	4.7K	JA	1/4W
R5766	401 020 1907	CARBON	4.7K	JA	1/4W
R5767	401 012 5609	CARBON	1K	JA	1/4W
R5768	401 012 3308	CARBON	10	JA	1/4W
R5769	401 012 3308	CARBON	10	JA	1/4W
(FUSE)					
F5001 ⚠	423 021 8402	FUSE 250V 2.5A			
(PROTECTORS)					
PR511 ⚠	645 005 9940	PROTECTOR,IC 1.0A 50V			
PR512 ⚠	645 005 9940	PROTECTOR,IC 1.0A 50V			
PR513 ⚠	645 005 9940	PROTECTOR,IC 1.0A 50V			
(CONNECTOR)					
CN501	645 005 7786	PLUG,4P			
(MISCELLANEOUS)					
	645 008 7677	HOLDER,FUSE,F5001			

COMPL PWB,PW-2

COMPLNO.613 162 2326

(SEMICONDUCTORS)					
Q5201	405 083 1706	TR 2SD1944-K			
Q5202	405 083 1706	TR 2SD1944-K			
Q5203	405 083 1706	TR 2SD1944-K			
(CAPACITORS)					
C5201	403 073 7004	CERAMIC	470P	K	50V
C5202	403 073 7004	CERAMIC	470P	K	50V
C5203	403 073 7004	CERAMIC	470P	K	50V

COMPL PWB,TB-1

COMPLNO.613 162 2296

(INDUCTORS)					
L8501	645 008 7936	CORE			
OR	613 130 3539	FERRITE CORE			
L8502	645 008 7936	CORE			
OR	613 130 3539	FERRITE CORE			
L8503	645 008 7936	CORE			
OR	613 130 3539	FERRITE CORE			
(RESISTORS)					
R8501	401 022 6702	CARBON	75	JA	1/4W
R8502	401 022 6702	CARBON	75	JA	1/4W
R8503	401 022 6702	CARBON	75	JA	1/4W
R8504	401 022 6702	CARBON	75	JA	1/4W
R8505	401 022 6702	CARBON	75	JA	1/4W
R8506	401 022 6702	CARBON	75	JA	1/4W
(JACKS)					
JK851	645 005 5690	JACK,RCA-8			
JK855	645 006 8836	SOCKET,BNC			
JK856	645 006 8836	SOCKET,BNC			
JK857	645 006 8836	SOCKET,BNC			
JK858	645 005 5799	SOCKET,DIN 4P			
(MISCELLANEOUS)					
	613 159 5156	HOLDER,JACK,BNC.HOLDER			
JW851	613 097 6284	CORD,TERMINAL C-5			

COMPL PWB,TB-2

COMPLNO.613 162 2302

(INDUCTORS)					
L8701	645 008 7936	CORE			
OR	613 130 3539	FERRITE CORE			
L8702	645 008 7936	CORE			
OR	613 130 3539	FERRITE CORE			

LOCATION	PARTS NO.	DESCRIPTION
(RESISTOR)		
R8651	401 022 6702	CARBON 75 JA 1/4W
(SWITCH)		
S8651	613 081 0946	SLIDE SWITCH 2-2,SYNC-THROUGH
(JACKS)		
JK871	645 005 5881	JACK,RCA-6
JK874	645 005 5683	JACK,RCA-1
JK875	645 006 8836	SOCKET,BNC
JK876	645 006 8836	SOCKET,BNC
JK877	645 006 8836	SOCKET,BNC
JK878	645 005 1395	SOCKET,D SUB 9P
JK879	645 005 1395	SOCKET,D SUB 9P
(MISCELLANEOUS)		
	613 159 5156	HOLDER,JACK,BNC.HOLDER
	613 053 6495	FIXER
	613 166 3343	CORD,TERMINAL

COMPL PWB,AD-1

COMPLNO.613 162 2333

LOCATION	PARTS NO.	DESCRIPTION
(SEMICONDUCTORS)		
Q2001	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2002	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2003	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2004	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2005	405 063 9708	TR DTC144EL
Q2006	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2007	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2008	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2009	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2010	405 003 7603	TR 2SA1345
Q2011	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2012	405 003 7603	TR 2SA1345
Q2014	405 018 0002	TR 2SC3331-S
OR	405 018 0101	TR 2SC3331-T
OR	405 018 0200	TR 2SC3331-U
Q2015	405 003 7603	TR 2SA1345
Q2016	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2017	405 003 7603	TR 2SA1345
Q2018	405 018 0002	TR 2SC3331-S
OR	405 018 0101	TR 2SC3331-T
OR	405 018 0200	TR 2SC3331-U
Q2019	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2020	405 018 9500	TR 2SC3901
Q2022	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2024	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2026	405 003 7702	TR 2SA1346
Q2027	405 018 2501	TR 2SC3399
Q2028	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2029	405 014 2703	TR 2SC2389-R
OR	405 014 2802	TR 2SC2389-S
Q2030	405 014 2703	TR 2SC2389-R
OR	405 014 2802	TR 2SC2389-S
Q2031	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2032	405 000 2205	TR DTA144ES
OR	405 003 7603	TR 2SA1345
Q2034	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2036	405 018 9500	TR 2SC3901
Q2037	405 063 9708	TR DTC144EL
Q2038	405 000 2205	TR DTA144ES
OR	405 003 7603	TR 2SA1345
Q2039	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q2107	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2108	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2115	405 003 7603	TR 2SA1345
Q2116	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2117	405 003 7603	TR 2SA1345
Q2118	405 018 0002	TR 2SC3331-S
OR	405 018 0101	TR 2SC3331-T
OR	405 018 0200	TR 2SC3331-U
Q2120	405 018 9500	TR 2SC3901
Q2129	405 014 2703	TR 2SC2389-R
OR	405 014 2802	TR 2SC2389-S
Q2130	405 014 2703	TR 2SC2389-R
OR	405 014 2802	TR 2SC2389-S
Q2131	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2132	405 000 2205	TR DTA144ES
OR	405 003 7603	TR 2SA1345
Q2133	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q2134	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q2139	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
(INTEGRATED CIRCUITS)		
IC201	409 051 3501	IC TC4066BP
IC202	409 018 4909	IC LA6458S
IC203	409 051 3501	IC TC4066BP
IC204	409 192 7901	IC M5207L01
IC205	409 361 8302	IC BA7795LS
IC206	409 018 4909	IC LA6458S
IC207	409 051 3501	IC TC4066BP
IC209	409 018 4909	IC LA6458S
IC215	409 361 8302	IC BA7795LS
(DIODES)		
D2001	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2002	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2003	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2004	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2006	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2007	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2008	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2009	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2010	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2011	407 007 9904	DIODE GMA01

LOCATION	PARTS NO.	DESCRIPTION			
D2011	407 012 4406	DIODE 1SS133			
D2012	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2014	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2015	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2104	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2107	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2108	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2109	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2113	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
D2114	407 007 9904	DIODE GMA01			
OR	407 012 4406	DIODE 1SS133			
(VARIABLE RESISTORS)					
VR201	645 004 5875	VR,SEMI,33K N			
OR	645 006 5323	VR,SEMI,33K N			
VR211	645 004 5875	VR,SEMI,33K N			
OR	645 006 5323	VR,SEMI,33K N			
(INDUCTORS)					
L2001	645 009 0417	INDUCTOR,10.0M J			
L2002	645 003 7238	INDUCTOR,560U J			
L2003	645 003 7238	INDUCTOR,560U J			
L2005	645 008 7936	CORE			
OR	613 130 3539	FERRITE CORE			
L2101	645 009 0417	INDUCTOR,10.0M J			
L2102	645 003 7238	INDUCTOR,560U J			
L2104	645 009 0417	INDUCTOR,10.0M J			
L2105	645 008 7936	CORE			
OR	613 130 3539	FERRITE CORE			
(TRANSFORMERS)					
T2001	613 109 3485	TRANS,OSC			
T2002	645 002 4658	TRANS,OSC,70.0KHZ			
T2102	645 002 4658	TRANS,OSC,70.0KHZ			
(CAPACITORS)					
C2001	403 167 7002	ELECT	4.7U	M	50V
C2002	403 167 7002	ELECT	4.7U	M	50V
C2003	403 167 7002	ELECT	4.7U	M	50V
C2006	403 149 0700	ELECT	33U	M	16V
C2007	403 150 6500	ELECT	22U	M	16V
C2008	403 001 5102	CERAMIC	2200P	M	16V
C2009	403 193 4709	ELECT	10U	M	16V
C2010	403 150 6500	ELECT	22U	M	16V
C2011	403 120 8909	CERAMIC	0.018U	J	16V
C2012	403 138 2302	CERAMIC	2200P	K	16V
C2013	403 121 9509	CERAMIC	0.1U	Z	50V
C2017	403 134 5901	ELECT	33U	M	16V
C2018	403 071 5408	CERAMIC	220P	J	50V
C2019	403 129 0409	CERAMIC	0.01U	K	16V
C2020	403 047 1007	ELECT	4.7U	M	25V
C2021	403 129 0409	CERAMIC	0.01U	K	16V
C2022	403 081 4606	POLYPRO	2700P	J	100V
C2024	403 129 9709	CERAMIC	0.015U	K	16V
C2025	403 167 7002	ELECT	4.7U	M	50V
C2026	403 167 7002	ELECT	4.7U	M	50V
C2027	403 107 9905	ELECT	10U	M	16V
C2028	403 003 6503	CERAMIC	0.033U	J	25V
C2037	403 001 1906	CERAMIC	0.01U	M	16V
C2040	403 070 4105	CERAMIC	120P	K	50V
C2051	403 163 8409	ELECT	47U	M	16V
C2052	403 125 5606	ELECT	100U	M	16V
C2053	403 125 5606	ELECT	100U	M	16V
C2054	403 134 9602	ELECT	47U	M	16V
C2055	403 125 5606	ELECT	100U	M	16V

LOCATION	PARTS NO.	DESCRIPTION			
C2056	403 149 0700	ELECT	33U	M	16V
C2057	403 047 1007	ELECT	4.7U	M	25V
C2058	403 129 0409	CERAMIC	0.01U	K	16V
C2059	403 129 0409	CERAMIC	0.01U	K	16V
C2062	403 193 7809	ELECT	100U	M	16V
C2063	403 082 1703	POLYPRO	0.047U	J	100V
C2064	403 121 9509	CERAMIC	0.1U	Z	50V
C2067	403 163 8409	ELECT	47U	M	16V
C2068	403 001 5102	CERAMIC	2200P	M	16V
C2069	403 120 8107	CERAMIC	0.012U	J	16V
C2070	403 001 3306	CERAMIC	1200P	M	16V
C2071	403 107 9905	ELECT	10U	M	16V
C2072	403 107 9905	ELECT	10U	M	16V
C2073	403 121 9509	CERAMIC	0.1U	Z	50V
C2074	403 107 9905	ELECT	10U	M	16V
C2075	403 107 9905	ELECT	10U	M	16V
C2076	403 115 0901	CERAMIC	560P	J	50V
C2101	403 167 7002	ELECT	4.7U	M	50V
C2102	403 121 3507	ELECT	4.7U	M	50V
C2103	403 167 7002	ELECT	4.7U	M	50V
C2104	403 150 0201	CERAMIC	0.018U	K	16V
C2105	403 121 3507	ELECT	4.7U	M	50V
C2106	403 149 0700	ELECT	33U	M	16V
C2107	403 150 6500	ELECT	22U	M	16V
C2108	403 001 5102	CERAMIC	2200P	M	16V
C2109	403 193 4709	ELECT	10U	M	16V
C2110	403 150 6500	ELECT	22U	M	16V
C2111	403 120 8909	CERAMIC	0.018U	J	16V
C2113	403 121 9509	CERAMIC	0.1U	Z	50V
C2115	403 121 9509	CERAMIC	0.1U	Z	50V
C2117	403 134 5901	ELECT	33U	M	16V
C2118	403 071 5408	CERAMIC	220P	J	50V
C2119	403 129 0409	CERAMIC	0.01U	K	16V
C2120	403 047 1007	ELECT	4.7U	M	25V
C2121	403 129 0409	CERAMIC	0.01U	K	16V
C2122	403 081 4606	POLYPRO	2700P	J	100V
C2126	403 162 1807	ELECT	22U	M	10V
C2127	403 107 9905	ELECT	10U	M	16V
C2128	403 003 6503	CERAMIC	0.033U	J	25V
C2129	403 189 2405	ELECT	10U	M	16V
C2130	403 119 7104	CERAMIC	6800P	K	16V
C2132	403 001 1609	CERAMIC	0.01U	K	16V
C2133	403 134 5901	ELECT	33U	M	16V
C2134	403 193 8608	ELECT	0.47U	M	50V
C2136	403 115 0901	CERAMIC	560P	J	50V
C2137	403 001 1906	CERAMIC	0.01U	M	16V
C2138	403 121 3507	ELECT	4.7U	M	50V
C2140	403 070 4105	CERAMIC	120P	K	50V
C2173	403 121 9509	CERAMIC	0.1U	Z	50V
C2174	403 107 9905	ELECT	10U	M	16V
C2175	403 107 9905	ELECT	10U	M	16V
(RESISTORS)					
R2001	401 020 2805	CARBON	47K	JA	1/4W
R2002	401 022 4005	CARBON	68K	JA	1/4W
R2003	401 020 2805	CARBON	47K	JA	1/4W
R2004	401 022 4005	CARBON	68K	JA	1/4W
R2005	401 012 8006	CARBON	100K	JA	1/4W
R2006	401 012 8006	CARBON	100K	JA	1/4W
R2007	401 014 5102	CARBON	15K	JA	1/4W
R2008	401 012 5609	CARBON	1K	JA	1/4W
R2009	401 015 3701	CARBON	18K	JA	1/4W
R2010	401 020 1907	CARBON	4.7K	JA	1/4W
R2011	401 017 2702	CARBON	27K	JA	1/4W
R2013	401 014 4006	CARBON	1.5K	JA	1/4W
R2014	401 017 2702	CARBON	27K	JA	1/4W
R2015	401 015 3701	CARBON	18K	JA	1/4W
R2016	401 020 2805	CARBON	47K	JA	1/4W
R2017	401 023 0600	CARBON	82	JA	1/4W
R2018	401 019 3905	CARBON	390K	JA	1/4W
R2019	401 021 8905	CARBON	6.2K	JA	1/4W
R2020	401 019 1802	CARBON	3.9K	JA	1/4W
R2021	401 020 1907	CARBON	4.7K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R2022	401 018 4804	CARBON	33K	JA	1/4W
R2023	401 012 6903	CARBON	10K	JA	1/4W
R2024	401 012 6903	CARBON	10K	JA	1/4W
R2027	401 021 1807	CARBON	560	JA	1/4W
R2028	401 012 8006	CARBON	100K	JA	1/4W
R2029	401 021 1807	CARBON	560	JA	1/4W
R2030	401 012 4404	CARBON	100	JA	1/4W
R2031	401 019 9501	CARBON	47	JA	1/4W
R2032	401 012 3308	CARBON	10	JA	1/4W
R2033	401 020 2805	CARBON	47K	JA	1/4W
R2034	401 018 1506	CARBON	33	JA	1/4W
R2035	401 016 2505	CARBON	220	JA	1/4W
R2037	401 016 3700	CARBON	2.2K	JA	1/4W
R2038	401 016 3700	CARBON	2.2K	JA	1/4W
R2039	401 017 9701	CARBON	30K	JA	1/4W
R2041	401 012 6903	CARBON	10K	JA	1/4W
R2042	401 013 7206	CARBON	120K	JA	1/4W
R2043	401 012 6903	CARBON	10K	JA	1/4W
R2044	401 012 8006	CARBON	100K	JA	1/4W
R2045	401 013 6308	CARBON	12K	JA	1/4W
R2051	401 012 6903	CARBON	10K	JA	1/4W
R2052	401 012 6903	CARBON	10K	JA	1/4W
R2053	401 012 6903	CARBON	10K	JA	1/4W
R2054	401 012 6903	CARBON	10K	JA	1/4W
R2055	401 012 6903	CARBON	10K	JA	1/4W
R2056	401 012 6903	CARBON	10K	JA	1/4W
R2057	401 012 6903	CARBON	10K	JA	1/4W
R2058	401 012 6903	CARBON	10K	JA	1/4W
R2060	401 012 6903	CARBON	10K	JA	1/4W
R2062	401 012 5609	CARBON	1K	JA	1/4W
R2063	401 022 4005	CARBON	68K	JA	1/4W
R2064	401 012 6903	CARBON	10K	JA	1/4W
R2065	401 012 6903	CARBON	10K	JA	1/4W
R2066	401 012 5609	CARBON	1K	JA	1/4W
R2067	401 012 5609	CARBON	1K	JA	1/4W
R2068	401 012 8006	CARBON	100K	JA	1/4W
R2069	401 012 5609	CARBON	1K	JA	1/4W
R2070	401 012 4404	CARBON	100	JA	1/4W
R2071	401 014 5102	CARBON	15K	JA	1/4W
R2072	401 019 9501	CARBON	47	JA	1/4W
R2073	401 012 3308	CARBON	10	JA	1/4W
R2074	401 018 1506	CARBON	33	JA	1/4W
R2075	401 012 6903	CARBON	10K	JA	1/4W
R2076	401 012 6903	CARBON	10K	JA	1/4W
R2079	401 012 6903	CARBON	10K	JA	1/4W
R2081	401 014 9001	CARBON	16K	JA	1/4W
R2083	401 012 5609	CARBON	1K	JA	1/4W
R2084	401 019 2908	CARBON	39K	JA	1/4W
R2086	401 012 6903	CARBON	10K	JA	1/4W
R2087	401 022 0700	CARBON	68	JA	1/4W
R2094	401 022 3008	CARBON	6.8K	JA	1/4W
R2095	401 012 6903	CARBON	10K	JA	1/4W
R2096	401 020 1907	CARBON	4.7K	JA	1/4W
R2097	401 012 6903	CARBON	10K	JA	1/4W
R2098	401 016 8408	CARBON	24K	JA	1/4W
R2099	401 012 6903	CARBON	10K	JA	1/4W
R2101	401 020 2805	CARBON	47K	JA	1/4W
R2102	401 022 4005	CARBON	68K	JA	1/4W
R2103	401 020 2805	CARBON	47K	JA	1/4W
R2104	401 022 4005	CARBON	68K	JA	1/4W
R2105	401 012 8006	CARBON	100K	JA	1/4W
R2106	401 012 8006	CARBON	100K	JA	1/4W
R2107	401 014 5102	CARBON	15K	JA	1/4W
R2108	401 012 5609	CARBON	1K	JA	1/4W
R2109	401 015 3701	CARBON	18K	JA	1/4W
R2110	401 020 1907	CARBON	4.7K	JA	1/4W
R2111	401 017 2702	CARBON	27K	JA	1/4W
R2113	401 014 4006	CARBON	1.5K	JA	1/4W
R2114	401 017 2702	CARBON	27K	JA	1/4W
R2115	401 015 3701	CARBON	18K	JA	1/4W
R2116	401 020 2805	CARBON	47K	JA	1/4W
R2117	401 023 0600	CARBON	82	JA	1/4W
R2118	401 019 3905	CARBON	390K	JA	1/4W
R2119	401 021 8905	CARBON	6.2K	JA	1/4W
R2122	401 015 3701	CARBON	18K	JA	1/4W
R2123	401 012 6903	CARBON	10K	JA	1/4W
R2124	401 012 6903	CARBON	10K	JA	1/4W
R2125	401 021 4006	CARBON	56K	JA	1/4W
R2126	401 020 8302	CARBON	5.1K	JA	1/4W
R2127	401 021 1807	CARBON	560	JA	1/4W
R2128	401 012 8006	CARBON	100K	JA	1/4W
R2129	401 021 1807	CARBON	560	JA	1/4W
R2130	401 012 4404	CARBON	100	JA	1/4W
R2131	401 019 9501	CARBON	47	JA	1/4W
R2132	401 012 3308	CARBON	10	JA	1/4W
R2133	401 020 2805	CARBON	47K	JA	1/4W
R2134	401 018 1506	CARBON	33	JA	1/4W
R2135	401 016 2505	CARBON	220	JA	1/4W
R2137	401 016 3700	CARBON	2.2K	JA	1/4W
R2138	401 016 3700	CARBON	2.2K	JA	1/4W
R2139	401 017 9701	CARBON	30K	JA	1/4W
R2140	401 014 4006	CARBON	1.5K	JA	1/4W
R2141	401 013 5202	CARBON	1.2K	JA	1/4W
R2144	401 012 8006	CARBON	100K	JA	1/4W
R2145	401 012 6903	CARBON	10K	JA	1/4W
R2146	401 012 8006	CARBON	100K	JA	1/4W
R2147	401 012 6903	CARBON	10K	JA	1/4W
R2148	401 014 9001	CARBON	16K	JA	1/4W
R2164	401 012 6903	CARBON	10K	JA	1/4W
R2177	401 012 6903	CARBON	10K	JA	1/4W
R2179	401 016 3700	CARBON	2.2K	JA	1/4W
R2180	401 013 4106	CARBON	120	JA	1/4W
R2181	401 022 3008	CARBON	6.8K	JA	1/4W
R2182	401 020 8302	CARBON	5.1K	JA	1/4W
R2183	401 020 8302	CARBON	5.1K	JA	1/4W
R2184	401 016 0006	CARBON	20K	JA	1/4W
R2185	401 023 7401	CARBON	9.1K	JA	1/4W
R2186	401 015 3701	CARBON	18K	JA	1/4W
R2187	401 017 0708	CARBON	270	JA	1/4W
R2188	401 012 5609	CARBON	1K	JA	1/4W
R2189	401 018 4804	CARBON	33K	JA	1/4W
R2190	401 023 3601	CARBON	82K	JA	1/4W
R2191	401 018 3708	CARBON	3.3K	JA	1/4W
R2192	401 016 3700	CARBON	2.2K	JA	1/4W
R2193	401 015 3701	CARBON	18K	JA	1/4W
R2195	401 012 5609	CARBON	1K	JA	1/4W
R2196	401 020 1907	CARBON	4.7K	JA	1/4W
R2197	401 012 6903	CARBON	10K	JA	1/4W
R2198	401 019 3905	CARBON	390K	JA	1/4W

(MISCELLANEOUS)

	613 053 8055	FIXER
	645 008 8070	FIXER

COMPL PWB,AD-2

COMPLNO.613 164 8500

(SEMICONDUCTORS)

Q2203	405 013 6801	TR 2SC2274-E
OR	405 013 7006	TR 2SC2274-F
Q2204	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2225	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2226	405 003 7702	TR 2SA1346
Q2227	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2228	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2232	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2233	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2234	405 018 9500	TR 2SC3901

LOCATION	PARTS NO.	DESCRIPTION
Q2301	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q2304	405 018 9500	TR 2SC3901
Q2305	405 018 9500	TR 2SC3901
Q2401	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q2404	405 018 9500	TR 2SC3901
Q2405	405 018 9500	TR 2SC3901
Q2502	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q2504	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q2505	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399

(INTEGRATED CIRCUITS)

LOCATION	PARTS NO.	DESCRIPTION
IC231	409 301 3602	IC AN3961NFBPA
IC232	409 051 2603	IC TC4051BP
IC233	409 051 3501	IC TC4066BP
IC234	409 051 2801	IC TC4052BP
IC235	409 018 4909	IC LA6458S
IC236	409 018 4909	IC LA6458S
IC237	409 121 6302	IC M5222L
IC238	409 039 7309	IC NJM4556S
IC251	409 349 1806	IC LC85400E
IC252	409 314 8403	IC LC32256P-80
OR	409 235 1408	IC LM33256G-10
OR	409 158 1400	IC LM33256G-12
OR	409 123 4306	IC LM33256N-15
IC255	409 117 9201	IC BA15218N
OR	409 018 4909	IC LA6458S

(DIODES)

LOCATION	PARTS NO.	DESCRIPTION
D2201	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2202	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2204	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D2205	407 012 4406	DIODE 1SS133
OR	407 007 9904	DIODE GMA01

(CRYSTAL DEVICE)

LOCATION	PARTS NO.	DESCRIPTION
X2501	645 011 5431	OSC,CERAMIC 18.43MHZ

(VARIABLE RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION
VR233	645 002 7703	VR,SEMI,10K S
VR234	645 002 7710	VR,SEMI,5K S
VR351	645 003 5166	VR,SEMI,220K N
OR	645 003 5593	VR,SEMI,220K N

(TRANSFORMERS)

LOCATION	PARTS NO.	DESCRIPTION
T2501	621 007 1991	D0LBY FILTER 2P0LE
OR	613 098 5996	TRAP,15.7KHZ/70KHZ

(CAPACITORS)

LOCATION	PARTS NO.	DESCRIPTION			
C2203	403 001 1906	CERAMIC	0.01U	M	16V
C2204	403 191 8808	ELECT	2.2U	M	50V
C2205	403 189 2405	ELECT	10U	M	16V
C2206	403 001 1906	CERAMIC	0.01U	M	16V
C2207	403 193 7809	ELECT	100U	M	16V
C2213	403 193 7908	ELECT	3.3U	M	25V
C2216	403 001 7908	CERAMIC	0.047U	K	16V
C2219	403 001 1906	CERAMIC	0.01U	M	16V
C2220	403 159 8109	ELECT	100U	M	6.3V
C2221	403 189 2405	ELECT	10U	M	16V
C2223	403 001 1906	CERAMIC	0.01U	M	16V
C2224	403 167 6609	ELECT	47U	M	10V
C2225	403 189 2405	ELECT	10U	M	16V
C2301	403 189 2405	ELECT	10U	M	16V
C2303	403 189 2405	ELECT	10U	M	16V
C2305	403 167 6609	ELECT	47U	M	10V
C2306	403 163 8003	ELECT	33U	M	10V
C2307	403 001 7908	CERAMIC	0.047U	K	16V
C2308	403 191 8808	ELECT	2.2U	M	50V
C2309	403 159 8109	ELECT	100U	M	6.3V
C2310	403 129 9709	CERAMIC	0.015U	K	16V
C2311	403 150 6500	ELECT	22U	M	16V
C2312	403 001 1906	CERAMIC	0.01U	M	16V
C2313	403 001 1906	CERAMIC	0.01U	M	16V
C2314	403 001 1906	CERAMIC	0.01U	M	16V
C2315	403 159 8109	ELECT	100U	M	6.3V
C2316	403 001 1906	CERAMIC	0.01U	M	16V
C2317	403 163 8003	ELECT	33U	M	10V
C2318	403 189 2405	ELECT	10U	M	16V
C2319	403 193 7700	ELECT	100U	M	10V
C2345	403 072 4202	CERAMIC	270P	J	50V
C2401	403 189 2405	ELECT	10U	M	16V
C2403	403 189 2405	ELECT	10U	M	16V
C2406	403 163 8003	ELECT	33U	M	10V
C2407	403 001 7908	CERAMIC	0.047U	K	16V
C2408	403 191 8808	ELECT	2.2U	M	50V
C2409	403 159 8109	ELECT	100U	M	6.3V
C2410	403 129 9709	CERAMIC	0.015U	K	16V
C2411	403 001 1906	CERAMIC	0.01U	M	16V
C2412	403 001 1906	CERAMIC	0.01U	M	16V
C2414	403 159 8109	ELECT	100U	M	6.3V
C2415	403 001 1906	CERAMIC	0.01U	M	16V
C2416	403 001 1906	CERAMIC	0.01U	M	16V
C2417	403 163 8003	ELECT	33U	M	10V
C2418	403 189 2405	ELECT	10U	M	16V
C2419	403 193 7700	ELECT	100U	M	10V
C2501	403 107 9905	ELECT	10U	M	16V
C2502	403 001 7601	CERAMIC	4700P	M	16V
C2503	403 134 8100	ELECT	100U	M	6.3V
C2504	403 001 1906	CERAMIC	0.01U	M	16V
C2505	403 134 8100	ELECT	100U	M	6.3V
C2506	403 001 1906	CERAMIC	0.01U	M	16V
C2507	403 107 9905	ELECT	10U	M	16V
C2508	403 121 2401	ELECT	22U	M	16V
C2509	403 107 9905	ELECT	10U	M	16V
C2510	403 189 2405	ELECT	10U	M	16V
C2513	403 073 6205	CERAMIC	470P	J	50V
C2514	403 001 1906	CERAMIC	0.01U	M	16V
C2516	403 026 2209	CERAMIC	47P	J	50V
C2518	403 135 4002	ELECT	47U	M	6.3V
C2520	403 072 7500	CERAMIC	330P	J	50V
C2524	403 022 7703	CERAMIC	33P	J	50V
C2534	403 189 2405	ELECT	10U	M	16V

(RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION			
R2202	401 023 3601	CARBON	82K	JA	1/4W
R2203	401 012 6903	CARBON	10K	JA	1/4W
R2204	401 012 6903	CARBON	10K	JA	1/4W
R2206	401 021 0602	CARBON	56	JA	1/4W
R2207	401 016 1409	CARBON	22	JA	1/4W
R2230	401 012 6903	CARBON	10K	JA	1/4W
R2238	401 012 5609	CARBON	1K	JA	1/4W
R2239	401 012 6903	CARBON	10K	JA	1/4W
R2240	401 020 2805	CARBON	47K	JA	1/4W
R2243	401 020 8807	CARBON	51K	JA	1/4W
R2244	401 012 8006	CARBON	100K	JA	1/4W
R2245	401 023 3601	CARBON	82K	JA	1/4W
R2246	401 018 4804	CARBON	33K	JA	1/4W
R2247	401 018 4804	CARBON	33K	JA	1/4W
R2248	401 012 6903	CARBON	10K	JA	1/4W
R2249	401 012 6903	CARBON	10K	JA	1/4W
R2250	401 021 1807	CARBON	560	JA	1/4W
R2251	401 012 8006	CARBON	100K	JA	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R2252	401 021 1807	CARBON	560	JA	1/4W
R2253	401 012 6903	CARBON	10K	JA	1/4W
R2254	401 012 6903	CARBON	10K	JA	1/4W
R2255	401 012 6903	CARBON	10K	JA	1/4W
R2301	401 020 2805	CARBON	47K	JA	1/4W
R2302	401 018 4804	CARBON	33K	JA	1/4W
R2305	401 020 2805	CARBON	47K	JA	1/4W
R2306	401 018 4804	CARBON	33K	JA	1/4W
R2311	401 016 6404	CARBON	2.2M	JA	1/4W
R2312	401 020 7800	CARBON	510	JA	1/4W
R2313	401 020 1907	CARBON	4.7K	JA	1/4W
R2314	401 013 6308	CARBON	12K	JA	1/4W
R2315	401 019 1802	CARBON	3.9K	JA	1/4W
R2316	401 091 1004	MT-FILM	15K	FD	1/4W
R2317	401 016 3700	CARBON	2.2K	JA	1/4W
R2318	401 019 0904	CARBON	390	JA	1/4W
R2319	401 023 1607	CARBON	820	JA	1/4W
R2320	401 012 6903	CARBON	10K	JA	1/4W
R2321	401 012 5609	CARBON	1K	JA	1/4W
R2322	401 012 5609	CARBON	1K	JA	1/4W
R2323	401 018 4804	CARBON	33K	JA	1/4W
R2324	401 014 5102	CARBON	15K	JA	1/4W
R2325	401 021 0602	CARBON	56	JA	1/4W
R2326	401 016 3700	CARBON	2.2K	JA	1/4W
R2327	401 021 0602	CARBON	56	JA	1/4W
R2328	401 014 6000	CARBON	150K	JA	1/4W
R2329	401 018 4804	CARBON	33K	JA	1/4W
R2330	401 012 6903	CARBON	10K	JA	1/4W
R2401	401 020 2805	CARBON	47K	JA	1/4W
R2402	401 018 4804	CARBON	33K	JA	1/4W
R2405	401 020 2805	CARBON	47K	JA	1/4W
R2406	401 018 4804	CARBON	33K	JA	1/4W
R2412	401 020 1907	CARBON	4.7K	JA	1/4W
R2413	401 020 7800	CARBON	510	JA	1/4W
R2414	401 013 6308	CARBON	12K	JA	1/4W
R2415	401 019 1802	CARBON	3.9K	JA	1/4W
R2416	401 107 2308	MT-FILM	12K	FD	1/4W
R2417	401 012 5609	CARBON	1K	JA	1/4W
R2418	401 019 0904	CARBON	390	JA	1/4W
R2419	401 023 1607	CARBON	820	JA	1/4W
R2420	401 012 6903	CARBON	10K	JA	1/4W
R2421	401 012 5609	CARBON	1K	JA	1/4W
R2422	401 012 5609	CARBON	1K	JA	1/4W
R2423	401 018 4804	CARBON	33K	JA	1/4W
R2424	401 014 5102	CARBON	15K	JA	1/4W
R2425	401 021 0602	CARBON	56	JA	1/4W
R2426	401 016 3700	CARBON	2.2K	JA	1/4W
R2427	401 021 0602	CARBON	56	JA	1/4W
R2428	401 014 6000	CARBON	150K	JA	1/4W
R2429	401 018 4804	CARBON	33K	JA	1/4W
R2430	401 012 6903	CARBON	10K	JA	1/4W
R2501	401 020 1907	CARBON	4.7K	JA	1/4W
R2502	401 016 3700	CARBON	2.2K	JA	1/4W
R2503	401 012 6903	CARBON	10K	JA	1/4W
R2504	401 012 6903	CARBON	10K	JA	1/4W
R2505	401 012 6903	CARBON	10K	JA	1/4W
R2506	401 012 6903	CARBON	10K	JA	1/4W
R2507	401 012 5609	CARBON	1K	JA	1/4W
R2510	401 012 5609	CARBON	1K	JA	1/4W
R2512	401 020 2805	CARBON	47K	JA	1/4W
R2513	401 012 5609	CARBON	1K	JA	1/4W
R2516	401 020 2805	CARBON	47K	JA	1/4W
R2517	401 016 5704	CARBON	220K	JA	1/4W
R2521	401 020 2805	CARBON	47K	JA	1/4W
R2529	401 018 4804	CARBON	33K	JA	1/4W
R2530	401 012 8006	CARBON	100K	JA	1/4W
R2579	401 012 8006	CARBON	100K	JA	1/4W
R2581	401 017 1705	CARBON	2.7K	JA	1/4W
R2582	401 021 2903	CARBON	5.6K	JA	1/4W
R2585	401 012 8006	CARBON	100K	JA	1/4W

(FUSE)

F2501	610 247 3322	FILTER,EMI 22000PF

LOCATION	PARTS NO.	DESCRIPTION

(MISCELLANEOUS)

	613 053 8048	FIXER
OR	645 006 4425	FIXER
	645 008 8070	FIXER

COMPL PWB,SV-1

COMPLNO.613 162 2272

(SEMICONDUCTORS)

Q3010	405 063 9708	TR DTC144EL
Q3011	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q3012	405 000 2205	TR DTA144ES
OR	405 003 7603	TR 2SA1345
Q3501	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q3602	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q3953	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q3954	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q3990	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q3991	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399
Q3992	405 093 0607	TR KSC2785-Y
OR	405 011 8401	TR 2SC1740S-Q
OR	405 011 8500	TR 2SC1740S-R
OR	405 099 8508	TR 2SC4640S
Q3993	405 000 6104	TR DTC144ES
OR	405 018 2501	TR 2SC3399

(INTEGRATED CIRCUITS)

IC301	410 243 7207	IC MPD78P138GF-HP42-3B9
IC302	409 243 4200	IC MN1380-R
OR	409 243 4309	IC MN1380-S
IC303	409 314 2005	IC LB1643
IC352	409 178 3200	IC LA7124
IC391	409 225 6109	IC BA7046
IC393	409 050 9009	IC TC4013BP
IC394	409 050 9009	IC TC4013BP
IC395	409 050 9009	IC TC4013BP
IC396	409 050 9009	IC TC4013BP
IC397	409 050 9009	IC TC4013BP

(DIODES)

D3010	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3011	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3012	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3013	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3014	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3015	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3016	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3017	407 007 9904	DIODE GMA01
OR	407 012 4406	DIODE 1SS133
D3065	407 007 9904	DIODE GMA01

LOCATION	PARTS NO.	DESCRIPTION				
D3065	407 012 4406	DIODE 1SS133				
D3094	407 007 9904	DIODE GMA01				
OR	407 012 4406	DIODE 1SS133				
D3095	407 007 9904	DIODE GMA01				
OR	407 012 4406	DIODE 1SS133				
D3990	407 007 9904	DIODE GMA01				
OR	407 012 4406	DIODE 1SS133				
D3991	407 007 9904	DIODE GMA01				
OR	407 012 4406	DIODE 1SS133				
D3992	407 007 9904	DIODE GMA01				
OR	407 012 4406	DIODE 1SS133				
D3993	407 007 9904	DIODE GMA01				
OR	407 012 4406	DIODE 1SS133				
(CRYSTAL DEVICES)						
X3001	613 113 7646	OSC,CRYSTAL 12MHZ				
OR	613 123 0149	OSC,CRYSTAL 12MHZ				
(CAPACITORS)						
C3002	403 069 1207	CERAMIC	1000P	K	50V	
C3003	403 001 1906	CERAMIC	0.01U	M	16V	
C3006	403 014 2600	CERAMIC	18P	J	50V	
C3007	403 014 2600	CERAMIC	18P	J	50V	
C3010	403 159 8109	ELECT	100U	M	6.3V	
C3041	403 001 1906	CERAMIC	0.01U	M	16V	
C3042	403 001 1906	CERAMIC	0.01U	M	16V	
C3071	403 189 2405	ELECT	10U	M	16V	
C3072	403 001 1906	CERAMIC	0.01U	M	16V	
C3073	403 121 9509	CERAMIC	0.1U	Z	50V	
C3074	403 159 8109	ELECT	100U	M	6.3V	
C3075	403 001 1906	CERAMIC	0.01U	M	16V	
C3076	403 129 0409	CERAMIC	0.01U	K	16V	
C3082	403 121 9509	CERAMIC	0.1U	Z	50V	
C3083	403 191 8808	ELECT	2.2U	M	50V	
C3092	403 138 2500	CERAMIC	0.022U	K	16V	
C3093	403 069 1207	CERAMIC	1000P	K	50V	
C3094	403 069 1207	CERAMIC	1000P	K	50V	
C3095	403 069 1207	CERAMIC	1000P	K	50V	
C3103	403 071 6207	CERAMIC	220P	K	50V	
C3104	403 068 9402	CERAMIC	100P	K	50V	
C3105	403 068 9402	CERAMIC	100P	K	50V	
C3258	403 129 0409	CERAMIC	0.01U	K	16V	
C3503	403 129 0409	CERAMIC	0.01U	K	16V	
C3504	403 001 6109	CERAMIC	2700P	K	16V	
C3506	403 138 2500	CERAMIC	0.022U	K	16V	
C3509	403 072 8200	CERAMIC	330P	K	50V	
C3515	403 189 2405	ELECT	10U	M	16V	
C3516	403 193 9001	ELECT	3.3U	M	50V	
C3517	403 074 9205	CERAMIC	680P	K	50V	
C3518	403 163 6009	NP-ELECT	33U	M	16V	
C3519	403 213 0605	CERAMIC	1200P	K	16V	
C3524	403 086 2805	NP-ELECT	1U	M	50V	
C3525	403 129 9907	CERAMIC	4700P	K	16V	
C3526	403 086 2805	NP-ELECT	1U	M	50V	
C3527	403 129 9907	CERAMIC	4700P	K	16V	
C3528	403 193 8400	ELECT	0.22U	M	50V	
C3529	403 129 0409	CERAMIC	0.01U	K	16V	
C3530	403 191 8709	ELECT	1U	M	50V	
C3531	403 129 0409	CERAMIC	0.01U	K	16V	
C3538	403 163 7907	ELECT	47U	M	6.3V	
C3539	403 163 7907	ELECT	47U	M	6.3V	
C3545	403 213 0506	CERAMIC	1000P	K	16V	
C3546	403 071 6207	CERAMIC	220P	K	50V	
C3550	403 119 6701	CERAMIC	0.068U	K	16V	
C3602	403 071 6207	CERAMIC	220P	K	50V	
C3603	403 071 6207	CERAMIC	220P	K	50V	
C3605	403 071 6207	CERAMIC	220P	K	50V	
C3951	403 059 3006	POLYESTER	2200P	J	50V	
C3952	403 191 8709	ELECT	1U	M	50V	
C3953	403 163 7907	ELECT	47U	M	6.3V	
C3954	403 003 3700	CERAMIC	0.022U	Z	25V	

LOCATION	PARTS NO.	DESCRIPTION			
C3971	403 068 8801	CERAMIC	100P	J	50V
C3980	403 001 1906	CERAMIC	0.01U	M	16V
C3981	403 001 1906	CERAMIC	0.01U	M	16V
C3982	403 001 1906	CERAMIC	0.01U	M	16V
C3991	403 018 6208	CERAMIC	220P	J	50V
C3992	403 018 6208	CERAMIC	220P	J	50V
C3993	403 001 1906	CERAMIC	0.01U	M	16V
(RESISTORS)					
R3001	401 012 6903	CARBON	10K	JA	1/4W
R3002	401 012 6903	CARBON	10K	JA	1/4W
R3003	401 016 5704	CARBON	220K	JA	1/4W
R3010	401 012 6903	CARBON	10K	JA	1/4W
R3021	401 012 5609	CARBON	1K	JA	1/4W
R3022	401 012 5609	CARBON	1K	JA	1/4W
R3023	401 012 5609	CARBON	1K	JA	1/4W
R3024	401 012 5609	CARBON	1K	JA	1/4W
R3025	401 012 5609	CARBON	1K	JA	1/4W
R3026	401 012 5609	CARBON	1K	JA	1/4W
R3027	401 012 5609	CARBON	1K	JA	1/4W
R3028	401 012 6903	CARBON	10K	JA	1/4W
R3030	401 012 8006	CARBON	100K	JA	1/4W
R3031	401 012 8006	CARBON	100K	JA	1/4W
R3032	401 012 8006	CARBON	100K	JA	1/4W
R3034	401 020 1907	CARBON	4.7K	JA	1/4W
R3035	401 020 1907	CARBON	4.7K	JA	1/4W
R3036	401 020 1907	CARBON	4.7K	JA	1/4W
R3037	401 020 2805	CARBON	47K	JA	1/4W
R3038	401 012 5609	CARBON	1K	JA	1/4W
R3039	401 012 5609	CARBON	1K	JA	1/4W
R3041	401 020 1907	CARBON	4.7K	JA	1/4W
R3042	401 016 0402	CARBON	200K	JA	1/4W
R3043	401 016 0402	CARBON	200K	JA	1/4W
R3051	401 020 1907	CARBON	4.7K	JA	1/4W
R3059	401 020 2805	CARBON	47K	JA	1/4W
R3065	401 017 2702	CARBON	27K	JA	1/4W
R3066	401 016 3700	CARBON	2.2K	JA	1/4W
R3068	401 023 4509	CARBON	820K	JA	1/4W
R3069	401 012 6903	CARBON	10K	JA	1/4W
R3070	401 017 3709	CARBON	270K	JA	1/4W
R3071	401 022 7105	CARBON	750	JA	1/4W
R3081	401 016 4707	CARBON	22K	JA	1/4W
R3082	401 016 4707	CARBON	22K	JA	1/4W
R3084 ⚠	402 036 3701	FUSIBLE RES	3.3	JA	1/2W
R3085	401 015 2605	CARBON	1.8K	JA	1/4W
R3086	401 013 5202	CARBON	1.2K	JA	1/4W
R3087	401 017 1705	CARBON	2.7K	JA	1/4W
R3251	401 012 5609	CARBON	1K	JA	1/4W
R3501	401 012 5609	CARBON	1K	JA	1/4W
R3502	401 020 0702	CARBON	470	JA	1/4W
R3503	401 012 8006	CARBON	100K	JA	1/4W
R3506	401 012 8006	CARBON	100K	JA	1/4W
R3507	401 012 8006	CARBON	100K	JA	1/4W
R3510	401 012 8006	CARBON	100K	JA	1/4W
R3511	401 012 5609	CARBON	1K	JA	1/4W
R3520	401 021 9902	CARBON	620K	JA	1/4W
R3521	401 022 8508	CARBON	750K	JA	1/4W
R3522	401 015 4609	CARBON	180K	JA	1/4W
R3523	401 012 8006	CARBON	100K	JA	1/4W
R3524	401 012 8006	CARBON	100K	JA	1/4W
R3525	401 017 8506	CARBON	300	JA	1/4W
R3526	401 020 7800	CARBON	510	JA	1/4W
R3527	401 020 7800	CARBON	510	JA	1/4W
R3529	401 012 6903	CARBON	10K	JA	1/4W
R3530	401 016 3700	CARBON	2.2K	JA	1/4W
R3531	401 016 3700	CARBON	2.2K	JA	1/4W
R3532	401 016 3700	CARBON	2.2K	JA	1/4W
R3533	401 016 3700	CARBON	2.2K	JA	1/4W
R3557	401 012 5609	CARBON	1K	JA	1/4W
R3567	401 012 6903	CARBON	10K	JA	1/4W
R3802	401 012 6903	CARBON	10K	JA	1/4W
R3952	401 107 8003	MT-FILM	130K	FD	1/4W

LOCATION	PARTS NO.	DESCRIPTION			
R3953	401 012 6903	CARBON	10K	JA	1/4W
R3956	401 012 5609	CARBON	1K	JA	1/4W
R3963	401 020 3802	CARBON	470K	JA	1/4W
R3965	401 012 6903	CARBON	10K	JA	1/4W
R3966	401 012 5609	CARBON	1K	JA	1/4W
R3974	401 015 3701	CARBON	18K	JA	1/4W
R3976	401 016 3700	CARBON	2.2K	JA	1/4W
R3979	401 016 4707	CARBON	22K	JA	1/4W
R3980	401 012 5609	CARBON	1K	JA	1/4W
R3981	401 012 5609	CARBON	1K	JA	1/4W
R3982	401 012 5609	CARBON	1K	JA	1/4W
R3983	401 012 5609	CARBON	1K	JA	1/4W
R3984	401 012 5609	CARBON	1K	JA	1/4W
R3985	401 012 5609	CARBON	1K	JA	1/4W
R3986	401 012 6903	CARBON	10K	JA	1/4W
R3987	401 012 6903	CARBON	10K	JA	1/4W
R3988	401 020 2805	CARBON	47K	JA	1/4W
R3989	401 020 2805	CARBON	47K	JA	1/4W
R3991	401 018 2701	CARBON	330	JA	1/4W
R3992	401 012 8006	CARBON	100K	JA	1/4W
R3994	401 012 6903	CARBON	10K	JA	1/4W
R3995	401 012 6903	CARBON	10K	JA	1/4W
R3996	401 012 6903	CARBON	10K	JA	1/4W
R3997	401 012 8006	CARBON	100K	JA	1/4W
R3998	401 012 5609	CARBON	1K	JA	1/4W
R3999	401 012 6903	CARBON	10K	JA	1/4W

COMPL PWB, MC-1

COMPL.NO. 613 149 9744

(DIODE)

D8001	407 094 1300	PHOTO COUPLE SPI-315-04-C
OR	407 043 0101	PHOTO DIODE ON2170-R

(RESISTOR)

R8001	401 017 0708	CARBON	270	JA	1/4W
OR	401 026 0607	CARBON	270	JA	1/6W
R8002	401 012 4404	CARBON	100	JA	1/4W
OR	401 024 6700	CARBON	100	JA	1/6W

(SWITCH)

S8001	613 022 4545	SPECIAL SWITCH

LOCATION PARTS NO. DESCRIPTION

8-2.PARTS LIST OF GVR-P07 (OPTION)

ACCESSORIES

LOCATION	PARTS NO.	DESCRIPTION
	645 004 3185	CABLE,9P-25P
	645 012 8530	DISK,MICRO-FLOPPY,MACINTOCH
	645 013 6610	DISK,MICRO-FLOPPY,MS-DOS
	613 162 4726	INSTRUCTION MANUAL,GVR-PO7
	613 166 8492	INSTRUCTION MANUAL,GVR-PO7 (MACINTOSH)

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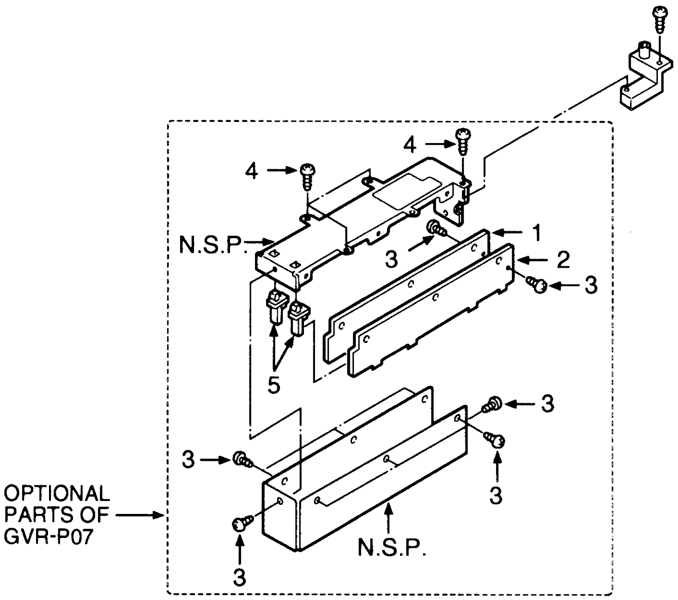
- IBM, PC are registered trademarks of International Business Machines Corporation.

CABINET & CHASSIS PARTS

LOCATION	PARTS NO.	DESCRIPTION
UN-1	613 162 2425	COMPL PWB,CT-1(OPTION)
UN-2	613 162 2364	COMPL PWB,CT-2(OPTION)
UN-3	411 021 5705	SCR S-TPG BIN 3X6
UN-4	411 021 3800	SCR S-TPG BIN 3X10
UN-5	613 082 5223	HOLDER

Undesignated numeral shows
Location No.:UN-
N.S.P.:Not available as service parts



ELECTRICAL PARTS

COMPL PWB,CT-1 (OPTION)

COMPLNO.613 162 2425

(INTEGRATED CIRCUITS)

LOCATION	PARTS NO.	DESCRIPTION
IC001	410 233 6203	IC AM29F010-120JC
IC002	409 333 4905	IC HM6264ALP-12
IC003	409 341 0203	IC DS80C320
IC004	409 165 6009	IC TC74HC138AP
IC005	409 203 1409	IC TC74HC123AP
IC006	409 165 6900	IC TC74HC32AP
IC007	409 121 7002	IC TC74HC4050AP
IC008	409 065 7601	IC TC74HC4049AP
IC009	409 181 9503	IC TC74HC374AP
IC010	409 246 8106	IC TC74HC597AP
IC011	409 192 8403	IC TC74HC595AP
IC012	409 165 7105	IC TC74HC373AP

(DIODE)

LOCATION	PARTS NO.	DESCRIPTION
D0001	407 012 4406	DIODE 1SS133

(CRYSTAL DEVICE)

LOCATION	PARTS NO.	DESCRIPTION
X0001	645 005 4051	OSC,CRYSTAL 14.7456MHZ

(CAPACITORS)

LOCATION	PARTS NO.	DESCRIPTION			
C0001	403 001 1906	CERAMIC	0.01U	M	16V
C0002	403 001 1906	CERAMIC	0.01U	M	16V
C0003	403 001 1906	CERAMIC	0.01U	M	16V
C0004	403 001 1906	CERAMIC	0.01U	M	16V
C0005	403 001 1906	CERAMIC	0.01U	M	16V
C0006	403 001 1906	CERAMIC	0.01U	M	16V
C0007	403 057 0601	POLYESTER	0.01U	K	50V
C0008	403 057 0601	POLYESTER	0.01U	K	50V
C0009	403 056 8103	POLYESTER	1000P	K	50V
C0010	403 022 7703	CERAMIC	33P	J	50V
C0011	403 022 7703	CERAMIC	33P	J	50V
C0012	403 001 1906	CERAMIC	0.01U	M	16V
C0013	403 001 1906	CERAMIC	0.01U	M	16V
C0014	403 001 1906	CERAMIC	0.01U	M	16V
C0015	403 001 1906	CERAMIC	0.01U	M	16V
C0016	403 135 4002	ELECT	47U	M	6.3V
C0017	403 135 4002	ELECT	47U	M	6.3V
C0018	403 135 4002	ELECT	47U	M	6.3V
C0019	403 135 4002	ELECT	47U	M	6.3V
C0020	403 135 4002	ELECT	47U	M	6.3V
C0021	403 135 4002	ELECT	47U	M	6.3V
C0022	403 135 4002	ELECT	47U	M	6.3V
C0026	403 001 1906	CERAMIC	0.01U	M	16V
C0040	403 121 9509	CERAMIC	0.1U	Z	50V
C0041	403 121 9509	CERAMIC	0.1U	Z	50V

(RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION			
R0001	401 012 6903	CARBON	10K	JA	1/4W
R0002	401 014 6000	CARBON	150K	JA	1/4W
R0003	401 012 6903	CARBON	10K	JA	1/4W
R0004	401 017 9206	CARBON	3K	JA	1/4W
R0005	401 012 6903	CARBON	10K	JA	1/4W
R0006	401 012 5609	CARBON	1K	JA	1/4W

(FLEXIBLE FLAT CABLE)

LOCATION	PARTS NO.	DESCRIPTION
	645 011 3536	FLEXIBLE FLAT CABLE CN003-CN031
	645 011 3369	FLEXIBLE FLAT CABLE CN002-CN030

COMPL PWB,CT-2(OPTION)

COMPLNO.613 162 2364

(SEMICONDUCTORS)

LOCATION	PARTS NO.	DESCRIPTION
Q0301	405 084 8209	TR 2SC2960-F-SPA
Q0303	405 002 6003	TR 2SA1177-E-SPA
Q0304	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R
Q0305	405 093 0508	TR KSA1175-Y
OR	405 099 8201	TR 2SA1782S
OR	405 099 8409	TR 2SA1782T-AC
OR	405 006 1707	TR 2SA933S-Q
OR	405 006 1806	TR 2SA933S-R

(INTEGRATED CIRCUITS)

LOCATION	PARTS NO.	DESCRIPTION
IC033	409 273 9800	IC DS8921N
IC034	409 148 1601	IC MAX232C
IC035	409 185 5709	IC TC74HC125AP
IC036	409 358 6007	IC LF13202N
IC037	409 358 5901	IC ICS2008AV
IC038	409 165 6801	IC TC74HC14AP
IC039	409 165 6900	IC TC74HC32AP
IC040	409 165 6900	IC TC74HC32AP
IC041	409 172 2506	IC TC74HC08AP
IC042	409 023 2907	IC LM318N
IC043	409 039 7903	IC NJM4558S

LOCATION	PARTS NO.	DESCRIPTION			
(CRYSTAL DEVICE)					
X0302	645 008 7899	OSC,CRYSTAL 14.31818MHZ			
(CAPACITORS)					
C0312	403 001 1906	CERAMIC	0.01U	M	16V
C0313	403 001 1906	CERAMIC	0.01U	M	16V
C0314	403 001 1906	CERAMIC	0.01U	M	16V
C0315	403 001 1906	CERAMIC	0.01U	M	16V
C0316	403 001 1906	CERAMIC	0.01U	M	16V
C0317	403 002 4708	CERAMIC	0.1U	Z	25V
C0318	403 168 6103	MT-POLYEST	0.1U	J	50V
C0319	403 168 6103	MT-POLYEST	0.1U	J	50V
C0321	403 109 6308	ELECT	1U	M	50V
C0322	403 107 9905	ELECT	10U	M	16V
C0323	403 107 9905	ELECT	10U	M	16V
C0324	403 107 9905	ELECT	10U	M	16V
C0325	403 107 9905	ELECT	10U	M	16V
C0326	403 109 6308	ELECT	1U	M	50V
C0327	403 107 9905	ELECT	10U	M	16V
C0328	403 107 9905	ELECT	10U	M	16V
C0329	403 001 1906	CERAMIC	0.01U	M	16V
C0330	403 001 1906	CERAMIC	0.01U	M	16V
C0334	403 135 4002	ELECT	47U	M	6.3V
C0335	403 135 4002	ELECT	47U	M	6.3V
C0336	403 135 4002	ELECT	47U	M	6.3V
C0337	403 001 1906	CERAMIC	0.01U	M	16V
C0338	403 135 4002	ELECT	47U	M	6.3V
C0339	403 001 1906	CERAMIC	0.01U	M	16V
C0340	403 134 9602	ELECT	47U	M	16V
C0341	403 134 9602	ELECT	47U	M	16V
C0342	403 135 4002	ELECT	47U	M	6.3V
C0343	403 135 4002	ELECT	47U	M	6.3V
C0344	403 135 4002	ELECT	47U	M	6.3V
C0345	403 001 1906	CERAMIC	0.01U	M	16V
C0346	403 001 1906	CERAMIC	0.01U	M	16V
C0350	403 068 8801	CERAMIC	100P	J	50V
(RESISTORS)					
R0307	401 016 3700	CARBON	2.2K	JA	1/4W
R0308	401 012 4404	CARBON	100	JA	1/4W
R0309	401 021 4006	CARBON	56K	JA	1/4W
R0310	401 014 4006	CARBON	1.5K	JA	1/4W
R0311	401 020 1907	CARBON	4.7K	JA	1/4W
R0312	401 020 1907	CARBON	4.7K	JA	1/4W
R0313	401 013 6308	CARBON	12K	JA	1/4W
R0314	401 013 6308	CARBON	12K	JA	1/4W
R0315	401 013 6308	CARBON	12K	JA	1/4W
R0316	401 016 3700	CARBON	2.2K	JA	1/4W
R0317	401 012 8006	CARBON	100K	JA	1/4W
R0318	401 012 8006	CARBON	100K	JA	1/4W
R0319	401 012 5609	CARBON	1K	JA	1/4W
R0320	401 012 9201	CARBON	1M	JA	1/4W

8-3.PARTS LIST OF GVR-P04 (OPTION)

ACCESSORIES

LOCATION	PARTS NO.	DESCRIPTION
	613 162 4733	INSTRUCTION MANUAL

PACKING MATERIALS

LOCATION	PARTS NO.	DESCRIPTION
	613 162 4238	CUSHION,INNER
	613 164 4786	CARTON CASE

ELECTRICAL PARTS

COMPL PWB,DM-1(OPTION)

COMPLNO.613 162 4474

LOCATION	PARTS NO.	DESCRIPTION
Q4001	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4003	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4004	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4005	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4006	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4007	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4008	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4009	405 063 2402	TR 2SD1000-LL
OR	405 047 5900	TR 2SD1622-S
Q4010	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4011	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4012	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4013	405 092 4200	TR 2SA1576-R-T106
OR	405 077 2207	TR 2SA1622-6-TL
Q4014	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4015	405 092 4200	TR 2SA1576-R-T106
OR	405 077 2207	TR 2SA1622-6-TL
Q4016	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4017	405 092 4200	TR 2SA1576-R-T106
OR	405 077 2207	TR 2SA1622-6-TL
Q4018	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4019	405 063 2402	TR 2SD1000-LL
OR	405 047 5900	TR 2SD1622-S
Q4020	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4021	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4022	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4023	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4024	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4029	405 092 4200	TR 2SA1576-R-T106
OR	405 077 2207	TR 2SA1622-6-TL
Q4030	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4201	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4202	405 063 2402	TR 2SD1000-LL
OR	405 047 5900	TR 2SD1622-S
Q4203	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4204	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4205	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4206	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4207	405 092 4200	TR 2SA1576-R-T106
OR	405 077 2207	TR 2SA1622-6-TL
Q4208	405 092 4200	TR 2SA1576-R-T106
OR	405 077 2207	TR 2SA1622-6-TL
Q4209	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4212	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4213	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4214	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4215	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4216	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
Q4217	405 092 4200	TR 2SA1576-R-T106
OR	405 077 2207	TR 2SA1622-6-TL
Q4503	405 092 4101	TR 2SC4081-R-T106
OR	405 077 3402	TR 2SC4211-6-TL
IC403	409 185 3408	IC TC74HC221AF(TP1)
IC404	409 130 4801	IC M51272FP
IC405	409 185 3408	IC TC74HC221AF(TP1)
IC406	409 307 2302	IC TC7W74F(TE12L)
IC407	409 341 4102	IC BA7655AF
IC408	409 155 8006	IC TC7S04F
IC409	409 250 9809	IC TC4W53F(TE12L)
IC410	409 306 9609	IC NJM2255D
IC411	409 039 6609	IC NJM2904M-T1
IC412	409 039 6609	IC NJM2904M-T1
IC413	409 297 2405	IC M62352FP
IC414	409 152 5602	IC TC7S32F
IC415	409 171 2606	IC TC74HC02AF(TP1)
IC416	409 244 2403	IC BA7046F
IC417	409 155 8006	IC TC7S04F
IC418	409 250 9809	IC TC4W53F(TE12L)
IC419	409 155 8006	IC TC7S04F
IC420	409 155 8006	IC TC7S04F
IC421	409 048 9905	IC TA7320P
IC422	409 048 9905	IC TA7320P
IC423	409 039 6609	IC NJM2904M-T1
IC424	409 039 6609	IC NJM2904M-T1
IC425	409 250 9809	IC TC4W53F(TE12L)
IC426	409 250 9809	IC TC4W53F(TE12L)
IC427	409 250 9809	IC TC4W53F(TE12L)
IC428	409 074 1805	IC NJM3404AM
IC429	409 257 7006	IC CXD1217M
IC430	409 155 8105	IC TC7SU04F(TE85L)
IC431	409 341 4003	IC NJM311
IC433	409 252 0309	IC CXD1216M-T6
IC434	409 074 1805	IC NJM3404AM
IC436	409 244 2403	IC BA7046F
IC437	409 155 8006	IC TC7S04F
IC438	409 144 3500	IC CXD1030M
IC439	409 155 8105	IC TC7SU04F(TE85L)
IC440	409 225 2002	IC TC74AC04F
IC441	409 225 2002	IC TC74AC04F
IC442	409 155 8105	IC TC7SU04F(TE85L)
IC443	409 185 0001	IC MC1648P
IC444	409 074 1805	IC NJM3404AM
IC445	409 334 0104	IC TC7W125FU
IC446	409 155 8006	IC TC7S04F
IC451	410 212 7009	IC UPD485505G-35
IC452	409 313 6301	IC CXD1176Q
IC453	409 313 6301	IC CXD1176Q
IC454	410 212 7009	IC UPD485505G-35
IC455	409 313 6301	IC CXD1176Q
IC456	409 341 4300	IC MB40978QFP
IC457	409 341 4508	IC CXK1206ATM
IC458	409 341 4508	IC CXK1206ATM
IC459	409 341 4508	IC CXK1206ATM
IC460	409 341 4508	IC CXK1206ATM
IC461	409 358 0500	IC LC93080A-W29

LOCATION	PARTS NO.	DESCRIPTION
IC464	409 341 4508	IC CXK1206ATM
IC465	409 341 4508	IC CXK1206ATM
IC466	409 341 4508	IC CXK1206ATM
IC467	409 341 4508	IC CXK1206ATM
IC468	409 341 4102	IC BA7655AF
D4001	407 130 4401	DIODE DAN202U
D4002	407 130 4401	DIODE DAN202U
D4003	407 130 4401	DIODE DAN202U
D4005	407 057 4904	ZENER DIODE RD6.8M-B1
OR	407 057 5000	ZENER DIODE RD6.8MB2
D4006	407 130 4401	DIODE DAN202U
D4007	407 057 4904	ZENER DIODE RD6.8M-B1
D4008	407 130 4401	DIODE DAN202U
D4009	407 130 4401	DIODE DAN202U
D4010	407 130 4401	DIODE DAN202U
D4011	407 130 4401	DIODE DAN202U
D4012	407 130 4401	DIODE DAN202U
D4013	407 130 4401	DIODE DAN202U
D4014	407 130 4401	DIODE DAN202U
D4015	407 130 4401	DIODE DAN202U
D4016	407 130 4401	DIODE DAN202U
D4201	407 057 4904	ZENER DIODE RD6.8M-B1
OR	407 057 5000	ZENER DIODE RD6.8MB2
D4202	407 130 4401	DIODE DAN202U
D4203	407 130 4401	DIODE DAN202U
D4204	407 130 4401	DIODE DAN202U
D4205	407 174 1909	VARACTOR DI HVU200A4TRV
D4206	407 174 1909	VARACTOR DI HVU200A4TRV
D4207	407 173 0507	VARACTOR DI HVU17TRF
D4208	407 173 0507	VARACTOR DI HVU17TRF
D4209	407 106 1601	?EODE DCG015-TL
OR	407 130 4401	DIODE DAN202U
D4401	407 174 2609	VARACTOR DI HVM25TL
(CRYSTAL DEVICES)		
X4001	645 000 5374	OSC,CRYSTAL 17.734475MHZ
X4201	645 000 5374	OSC,CRYSTAL 17.734475MHZ
X4202	645 009 6655	OSC,CRYSTAL 14.1875MHZ
(CERAMIC RESONATORS)		
XF401	613 106 9169	FILTER,EMI 0.022UF
XF402	613 106 9169	FILTER,EMI 0.022UF
XF403	645 006 3398	FILTER,EMI 47PF
XF404	645 006 3398	FILTER,EMI 47PF
XF405	645 006 3398	FILTER,EMI 47PF
XF406	645 006 3398	FILTER,EMI 47PF
XF407	645 006 3404	FILTER,EMI 470PF
XF408	645 006 3398	FILTER,EMI 47PF
XF409	645 006 3398	FILTER,EMI 47PF
XF410	645 006 3404	FILTER,EMI 470PF
XF411	645 006 3404	FILTER,EMI 470PF
XF412	645 006 3404	FILTER,EMI 470PF
XF413	645 009 4477	FILTER,LP 6MHZ
XF414	645 009 4507	FILTER,BP 4.43MHZ
XF415	645 009 4491	FILTER,LP 2MHZ
XF416	645 009 4491	FILTER,LP 2MHZ
XF417	645 009 4484	FILTER,LP 7.25MHZ
XF419	645 006 3404	FILTER,EMI 470PF
XF421	645 009 4507	FILTER,BP 4.43MHZ
XF441	645 006 2865	FILTER,BP 14.3MHZ
(VARIABLE RESISTORS)		
VR401	645 003 6774	VR,SEMI,4.7K N
VR402	645 003 8655	VR,SEMI,10K N
VR403	645 003 6774	VR,SEMI,4.7K N
VR404	645 003 6774	VR,SEMI,4.7K N
VR406	645 003 6774	VR,SEMI,4.7K N
VR407	645 003 6774	VR,SEMI,4.7K N
VR408	645 003 6781	VR,SEMI,47K N
VR409	645 003 6774	VR,SEMI,4.7K N
VR410	645 003 6774	VR,SEMI,4.7K N
VR421	645 003 6774	VR,SEMI,4.7K N
VR422	645 003 6774	VR,SEMI,4.7K N

LOCATION	PARTS NO.	DESCRIPTION
VR424	645 003 6774	VR,SEMI,4.7K N
VR425	645 003 6774	VR,SEMI,4.7K N
VR441	645 003 6774	VR,SEMI,4.7K N
(INDUCTORS)		
L4002	645 008 9701	INDUCTOR,10U K
L4005	645 003 9553	INDUCTOR,56U J
L4006	645 008 9701	INDUCTOR,10U K
L4007	645 008 9701	INDUCTOR,10U K
L4008	645 008 9701	INDUCTOR,10U K
L4009	645 008 9701	INDUCTOR,10U K
L4010	645 008 9701	INDUCTOR,10U K
L4011	645 008 9701	INDUCTOR,10U K
L4013	645 008 9701	INDUCTOR,10U K
L4014	613 119 9262	COIL,BEAD
L4015	613 119 9262	COIL,BEAD
L4016	645 003 9485	INDUCTOR,22U J
L4201	645 003 9485	INDUCTOR,22U J
L4202	645 008 9701	INDUCTOR,10U K
L4203	645 008 9701	INDUCTOR,10U K
L4204	645 008 9701	INDUCTOR,10U K
L4205	645 008 9701	INDUCTOR,10U K
L4401	645 008 9701	INDUCTOR,10U K
L4501	645 008 9701	INDUCTOR,10U K
L4502	645 008 9701	INDUCTOR,10U K
L4503	645 008 9701	INDUCTOR,10U K
L4504	645 008 9701	INDUCTOR,10U K
L4505	645 008 9701	INDUCTOR,10U K

(CAPACITORS)

LOCATION	PARTS NO.	DESCRIPTION			
C4001	403 285 4303	TA-SOLID	1U	M	16V
C4002	403 285 4907	TA-SOLID	0.47U	M	25V
C4003	403 285 4303	TA-SOLID	1U	M	16V
C4004	403 176 2401	CERAMIC	0.047U	Z	25V
C4005	403 176 2401	CERAMIC	0.047U	Z	25V
C4006	403 113 3805	CERAMIC	1000P	K	50V
C4007	403 155 1807	CERAMIC	0.01U	K	25V
C4008	403 155 1807	CERAMIC	0.01U	K	25V
C4009	403 155 1807	CERAMIC	0.01U	K	25V
C4010	403 155 1807	CERAMIC	0.01U	K	25V
C4011	403 175 4505	ELECT	47U	M	6.3V
C4012	403 285 4303	TA-SOLID	1U	M	16V
C4013	403 155 1807	CERAMIC	0.01U	K	25V
C4014	403 155 4204	CERAMIC	15P	J	50V
C4015	403 157 2901	CERAMIC	47P	J	50V
C4016	403 157 1904	CERAMIC	10P	D	50V
C4017	403 113 3805	CERAMIC	1000P	K	50V
C4019	403 155 1807	CERAMIC	0.01U	K	25V
C4020	403 285 4303	TA-SOLID	1U	M	16V
C4021	403 155 1807	CERAMIC	0.01U	K	25V
C4023	403 215 2904	CERAMIC	0.022U	K	25V
C4024	403 175 4505	ELECT	47U	M	6.3V
C4025	403 215 2904	CERAMIC	0.022U	K	25V
C4026	403 175 4505	ELECT	47U	M	6.3V
C4027	403 113 4109	CERAMIC	2200P	K	50V
C4028	403 157 6800	CERAMIC	680P	K	50V
C4029	403 155 1807	CERAMIC	0.01U	K	25V
C4030	403 169 2807	CERAMIC	330P	J	50V
C4031	403 155 1807	CERAMIC	0.01U	K	25V
C4032	403 155 1807	CERAMIC	0.01U	K	25V
C4033	403 162 6604	ELECT	2.2U	M	50V
C4034	403 285 4907	TA-SOLID	0.47U	M	25V
C4035	403 248 9703	ELECT	10U	M	16V
C4036	403 155 1807	CERAMIC	0.01U	K	25V
C4037	403 155 1807	CERAMIC	0.01U	K	25V
C4038	403 162 6604	ELECT	2.2U	M	50V
C4039	403 285 4907	TA-SOLID	0.47U	M	25V
C4040	403 248 9703	ELECT	10U	M	16V
C4041	403 155 1807	CERAMIC	0.01U	K	25V
C4042	403 155 1807	CERAMIC	0.01U	K	25V
C4043	403 155 1807	CERAMIC	0.01U	K	25V
C4044	403 175 4505	ELECT	47U	M	6.3V
C4045	403 155 1807	CERAMIC	0.01U	K	25V

LOCATION	PARTS NO.	DESCRIPTION			
C4046	403 175 4505	ELECT	47U	M	6.3V
C4047	403 215 2904	CERAMIC	0.022U	K	25V
C4048	403 215 2904	CERAMIC	0.022U	K	25V
C4049	403 175 0606	ELECT	100U	M	6.3V
C4050	403 139 7306	CERAMIC	18P	J	50V
C4051	403 215 2904	CERAMIC	0.022U	K	25V
C4052	403 215 2904	CERAMIC	0.022U	K	25V
C4053	403 175 3300	ELECT	47U	M	16V
C4054	403 175 3300	ELECT	47U	M	16V
C4055	403 175 3300	ELECT	47U	M	16V
C4056	403 215 2904	CERAMIC	0.022U	K	25V
C4057	403 175 3300	ELECT	47U	M	16V
C4058	403 175 3300	ELECT	47U	M	16V
C4059	403 215 2904	CERAMIC	0.022U	K	25V
C4060	403 175 4109	ELECT	22U	M	16V
C4061	403 175 4109	ELECT	22U	M	16V
C4062	403 155 1807	CERAMIC	0.01U	K	25V
C4063	403 157 6701	CERAMIC	560P	K	50V
C4064	403 248 9703	ELECT	10U	M	16V
C4065	403 175 4505	ELECT	47U	M	6.3V
C4066	403 162 6604	ELECT	2.2U	M	50V
C4067	403 215 2904	CERAMIC	0.022U	K	25V
C4068	403 175 3300	ELECT	47U	M	16V
C4069	403 285 4303	TA-SOLID	1U	M	16V
C4070	403 157 6800	CERAMIC	680P	K	50V
C4071	403 176 0209	CERAMIC	0.1U	Z	25V
C4072	403 155 1807	CERAMIC	0.01U	K	25V
C4073	403 175 4505	ELECT	47U	M	6.3V
C4074	403 155 1807	CERAMIC	0.01U	K	25V
C4075	403 155 1807	CERAMIC	0.01U	K	25V
C4076	403 215 2904	CERAMIC	0.022U	K	25V
C4077	403 155 1807	CERAMIC	0.01U	K	25V
C4078	403 155 1807	CERAMIC	0.01U	K	25V
C4079	403 155 1807	CERAMIC	0.01U	K	25V
C4080	403 215 2904	CERAMIC	0.022U	K	25V
C4081	403 248 9703	ELECT	10U	M	16V
C4082	403 175 4505	ELECT	47U	M	6.3V
C4083	403 258 4200	ELECT	22U	M	6.3V
C4084	403 157 6404	CERAMIC	330P	K	50V
C4085	403 215 2904	CERAMIC	0.022U	K	25V
C4087	403 175 3300	ELECT	47U	M	16V
C4088	403 215 2904	CERAMIC	0.022U	K	25V
C4089	403 175 4505	ELECT	47U	M	6.3V
C4090	403 285 4303	TA-SOLID	1U	M	16V
C4091	403 113 4109	CERAMIC	2200P	K	50V
C4092	403 157 3601	CERAMIC	100P	J	50V
C4094	403 139 7504	CERAMIC	39P	J	50V
C4095	403 153 9300	CERAMIC	82P	J	50V
C4096	403 139 7504	CERAMIC	39P	J	50V
C4097	403 153 9300	CERAMIC	82P	J	50V
C4098	403 155 1807	CERAMIC	0.01U	K	25V
C4099	403 155 1807	CERAMIC	0.01U	K	25V
C4101	403 248 9703	ELECT	10U	M	16V
C4102	403 157 6701	CERAMIC	560P	K	50V
C4103	403 155 1302	CERAMIC	150P	J	50V
C4104	403 155 1302	CERAMIC	150P	J	50V
C4105	403 155 1807	CERAMIC	0.01U	K	25V
C4106	403 155 1807	CERAMIC	0.01U	K	25V
C4107	403 157 3106	CERAMIC	56P	J	50V
C4108	403 155 1807	CERAMIC	0.01U	K	25V
C4109	403 155 1807	CERAMIC	0.01U	K	25V
C4110	403 155 1609	CERAMIC	33P	J	50V
C4112	403 162 4006	ELECT	22U	M	6.3V
C4113	403 155 1807	CERAMIC	0.01U	K	25V
C4201	403 157 4202	CERAMIC	220P	J	50V
C4202	403 113 3805	CERAMIC	1000P	K	50V
C4203	403 215 2904	CERAMIC	0.022U	K	25V
C4204	403 175 4505	ELECT	47U	M	6.3V
C4205	403 157 4202	CERAMIC	220P	J	50V
C4206	403 285 4303	TA-SOLID	1U	M	16V
C4207	403 113 3805	CERAMIC	1000P	K	50V
C4208	403 113 3805	CERAMIC	1000P	K	50V
C4210	403 215 2904	CERAMIC	0.022U	K	25V
C4211	403 155 1807	CERAMIC	0.01U	K	25V
C4212	403 157 2901	CERAMIC	47P	J	50V
C4213	403 155 1807	CERAMIC	0.01U	K	25V
C4215	403 113 3805	CERAMIC	1000P	K	50V
C4216	403 155 1807	CERAMIC	0.01U	K	25V
C4217	403 155 1807	CERAMIC	0.01U	K	25V
C4218	403 150 2106	NP-ELECT	4.7U	M	25V
C4219	403 155 1807	CERAMIC	0.01U	K	25V
C4220	403 248 9703	ELECT	10U	M	16V
C4221	403 175 3300	ELECT	47U	M	16V
C4222	403 215 2904	CERAMIC	0.022U	K	25V
C4223	403 155 1807	CERAMIC	0.01U	K	25V
C4224	403 155 1807	CERAMIC	0.01U	K	25V
C4225	403 155 1807	CERAMIC	0.01U	K	25V
C4226	403 155 1807	CERAMIC	0.01U	K	25V
C4227	403 155 1807	CERAMIC	0.01U	K	25V
C4228	403 155 1807	CERAMIC	0.01U	K	25V
C4229	403 155 1807	CERAMIC	0.01U	K	25V
C4230	403 155 1807	CERAMIC	0.01U	K	25V
C4231	403 155 1807	CERAMIC	0.01U	K	25V
C4232	403 155 1807	CERAMIC	0.01U	K	25V
C4233	403 155 1807	CERAMIC	0.01U	K	25V
C4234	403 157 2901	CERAMIC	47P	J	50V
C4235	403 215 2904	CERAMIC	0.022U	K	25V
C4236	403 175 4505	ELECT	47U	M	6.3V
C4237	403 155 1807	CERAMIC	0.01U	K	25V
C4238	403 155 1807	CERAMIC	0.01U	K	25V
C4239	403 155 1807	CERAMIC	0.01U	K	25V
C4241	403 113 3805	CERAMIC	1000P	K	50V
C4242	403 113 3805	CERAMIC	1000P	K	50V
C4244	403 176 0209	CERAMIC	0.1U	Z	25V
C4245	403 175 4505	ELECT	47U	M	6.3V
C4246	403 215 2904	CERAMIC	0.022U	K	25V
C4247	403 175 4505	ELECT	47U	M	6.3V
C4248	403 215 2904	CERAMIC	0.022U	K	25V
C4249	403 155 1807	CERAMIC	0.01U	K	25V
C4250	403 175 4505	ELECT	47U	M	6.3V
C4251	403 215 2904	CERAMIC	0.022U	K	25V
C4252	403 207 0505	CERAMIC	0.47U	Z	16V
C4253	403 113 3805	CERAMIC	1000P	K	50V
C4254	403 155 1807	CERAMIC	0.01U	K	25V
C4255	403 155 1807	CERAMIC	0.01U	K	25V
C4257	403 175 4505	ELECT	47U	M	6.3V
C4258	403 215 2904	CERAMIC	0.022U	K	25V
C4265	403 155 1302	CERAMIC	150P	J	50V
C4267	403 155 1807	CERAMIC	0.01U	K	25V
C4268	403 155 1807	CERAMIC	0.01U	K	25V
C4269	403 155 1807	CERAMIC	0.01U	K	25V
C4270	403 175 3300	ELECT	47U	M	16V
C4272	403 059 3808	POLYESTER	2200P	K	50V
C4273	403 215 2904	CERAMIC	0.022U	K	25V
C4274	403 215 2904	CERAMIC	0.022U	K	25V
C4275	403 113 3805	CERAMIC	1000P	K	50V
C4401	403 175 4505	ELECT	47U	M	6.3V
C4402	403 215 2904	CERAMIC	0.022U	K	25V
C4403	403 155 1807	CERAMIC	0.01U	K	25V
C4404	403 155 1807	CERAMIC	0.01U	K	25V
C4405	403 155 1807	CERAMIC	0.01U	K	25V
C4406	403 155 1807	CERAMIC	0.01U	K	25V
C4408	403 157 6602	CERAMIC	470P	K	50V
C4409	403 174 6807	NP-ELECT	2.2U	M	35V
C4410	403 215 2904	CERAMIC	0.022U	K	25V
C4411	403 215 2904	CERAMIC	0.022U	K	25V
C4501	403 155 1807	CERAMIC	0.01U	K	25V
C4502	403 155 1807	CERAMIC	0.01U	K	25V
C4503	403 155 1807	CERAMIC	0.01U	K	25V
C4504	403 248 9703	ELECT	10U	M	16V
C4505	403 155 1807	CERAMIC	0.01U	K	25V
C4506	403 155 1807	CERAMIC	0.01U	K	25V
C4507	403 155 1807	CERAMIC	0.01U	K	25V
C4508	403 248 9703	ELECT	10U	M	16V
C4509	403 155 1807	CERAMIC	0.01U	K	25V
C4510	403 155 1807	CERAMIC	0.01U	K	25V

LOCATION	PARTS NO.	DESCRIPTION			
C4511	403 155 1807	CERAMIC	0.01U	K	25V
C4512	403 248 9703	ELECT	10U	M	16V
C4513	403 248 9703	ELECT	10U	M	16V
C4514	403 155 1807	CERAMIC	0.01U	K	25V
C4515	403 175 4505	ELECT	47U	M	6.3V
C4516	403 176 0209	CERAMIC	0.1U	Z	25V
C4517	403 176 0209	CERAMIC	0.1U	Z	25V
C4518	403 176 0209	CERAMIC	0.1U	Z	25V
C4519	403 176 0209	CERAMIC	0.1U	Z	25V
C4520	403 176 0209	CERAMIC	0.1U	Z	25V
C4521	403 176 0209	CERAMIC	0.1U	Z	25V
C4522	403 175 4505	ELECT	47U	M	6.3V
C4523	403 176 0209	CERAMIC	0.1U	Z	25V
C4524	403 155 1807	CERAMIC	0.01U	K	25V
C4525	403 176 0209	CERAMIC	0.1U	Z	25V
C4526	403 176 0209	CERAMIC	0.1U	Z	25V
C4527	403 175 4505	ELECT	47U	M	6.3V
C4528	403 176 0209	CERAMIC	0.1U	Z	25V
C4529	403 176 0209	CERAMIC	0.1U	Z	25V
C4530	403 176 0209	CERAMIC	0.1U	Z	25V
C4531	403 176 0209	CERAMIC	0.1U	Z	25V
C4532	403 176 0209	CERAMIC	0.1U	Z	25V
C4533	403 176 0209	CERAMIC	0.1U	Z	25V
C4534	403 176 0209	CERAMIC	0.1U	Z	25V
C4535	403 176 0209	CERAMIC	0.1U	Z	25V
C4536	403 175 4505	ELECT	47U	M	6.3V
C4537	403 155 1807	CERAMIC	0.01U	K	25V
C4538	403 155 1807	CERAMIC	0.01U	K	25V
C4539	403 176 0209	CERAMIC	0.1U	Z	25V
C4540	403 155 1807	CERAMIC	0.01U	K	25V
C4541	403 155 1807	CERAMIC	0.01U	K	25V
C4542	403 176 0209	CERAMIC	0.1U	Z	25V
C4543	403 258 4200	ELECT	22U	M	6.3V
C4544	403 258 4200	ELECT	22U	M	6.3V
C4545	403 175 4505	ELECT	47U	M	6.3V
C4546	403 175 4505	ELECT	47U	M	6.3V
C4547	403 175 4505	ELECT	47U	M	6.3V
C4548	403 248 9703	ELECT	10U	M	16V
C4549	403 175 4505	ELECT	47U	M	6.3V

(RESISTORS)

LOCATION	PARTS NO.	DESCRIPTION			
RB451	645 001 3195	R-NETWORK	10KX40.063W		
RB452	645 001 3195	R-NETWORK	10KX40.063W		
RB453	645 001 3195	R-NETWORK	10KX40.063W		
RB454	645 001 3195	R-NETWORK	10KX40.063W		
R4002	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4003	401 105 1204	MT-GLAZE	120K	JA	1/16W
R4004	401 113 8103	MT-GLAZE	43K	JA	1/16W
R4005	401 105 2508	MT-GLAZE	20K	JA	1/16W
R4006	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4007	401 113 6802	MT-GLAZE	11K	JA	1/16W
R4008	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4009	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4010	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4011	401 105 5509	MT-GLAZE	470K	JA	1/16W
R4012	401 105 1501	MT-GLAZE	1.5K	JA	1/16W
R4013	401 113 4204	MT-GLAZE	51	JA	1/16W
R4014	401 105 4007	MT-GLAZE	330	JA	1/16W
R4015	401 105 8005	MT-GLAZE	1M	JA	1/16W
R4016	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4017	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4018	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4019	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4020	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4021	401 105 4601	MT-GLAZE	3.9K	JA	1/16W
R4022	401 105 7404	MT-GLAZE	8.2K	JA	1/16W
R4023	401 105 7404	MT-GLAZE	8.2K	JA	1/16W
R4024	401 105 4205	MT-GLAZE	33K	JA	1/16W
R4025	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4026	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4027	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4028	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4029	401 105 1105	MT-GLAZE	12K	JA	1/16W

LOCATION	PARTS NO.	DESCRIPTION			
R4030	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4031	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4032	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4033	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4034	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4035	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4036	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4037	401 105 0405	MT-GLAZE	100	JA	1/16W
R4038	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4039	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4040	401 105 6100	MT-GLAZE	560K	JA	1/16W
R4041	401 105 5202	MT-GLAZE	470	JA	1/16W
R4042	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4043	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4044	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4045	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4046	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4047	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4048	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4049	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4050	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4051	401 105 6506	MT-GLAZE	680	JA	1/16W
R4052	401 105 4601	MT-GLAZE	3.9K	JA	1/16W
R4053	401 105 2409	MT-GLAZE	2K	JA	1/16W
R4054	401 105 1501	MT-GLAZE	1.5K	JA	1/16W
R4055	401 105 3307	MT-GLAZE	2.7K	JA	1/16W
R4056	401 105 0405	MT-GLAZE	100	JA	1/16W
R4058	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4059	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4060	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4061	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4062	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4063	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4064	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4065	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4066	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4067	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4068	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4069	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4070	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4071	401 105 1402	MT-GLAZE	150	JA	1/16W
R4072	401 105 7404	MT-GLAZE	8.2K	JA	1/16W
R4073	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4074	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4075	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4076	401 105 3406	MT-GLAZE	27K	JA	1/16W
R4077	401 105 0405	MT-GLAZE	100	JA	1/16W
R4078	401 105 0405	MT-GLAZE	100	JA	1/16W
R4079	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4080	401 105 0405	MT-GLAZE	100	JA	1/16W
R4081	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4082	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4083	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4084	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4085	401 105 3307	MT-GLAZE	2.7K	JA	1/16W
R4086	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4087	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4088	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4089	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4090	401 105 4205	MT-GLAZE	33K	JA	1/16W
R4091	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4092	401 105 5509	MT-GLAZE	470K	JA	1/16W
R4093	401 113 8707	MT-GLAZE	130K	JA	1/16W
R4094	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4095	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4096	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4097	401 105 6506	MT-GLAZE	680	JA	1/16W
R4098	401 105 4601	MT-GLAZE	3.9K	JA	1/16W
R4099	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4100	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4101	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4102	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4103	401 105 5400	MT-GLAZE	47K	JA	1/16W

LOCATION	PARTS NO.	DESCRIPTION			
R4104	401 105 1006	MT-GLAZE	1.2K	JA	1/16W
R4105	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4106	401 105 1006	MT-GLAZE	1.2K	JA	1/16W
R4107	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4108	401 105 4502	MT-GLAZE	390	JA	1/16W
R4109	401 113 5706	MT-GLAZE	910	JA	1/16W
R4110	401 105 7305	MT-GLAZE	820	JA	1/16W
R4111	401 105 7305	MT-GLAZE	820	JA	1/16W
R4112	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4113	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4114	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4115	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4117	401 105 5202	MT-GLAZE	470	JA	1/16W
R4118	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4119	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4120	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4121	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4122	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4125	401 105 0405	MT-GLAZE	100	JA	1/16W
R4126	401 105 0405	MT-GLAZE	100	JA	1/16W
R4127	401 105 0405	MT-GLAZE	100	JA	1/16W
R4128	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4129	401 105 0405	MT-GLAZE	100	JA	1/16W
R4130	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4131	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4132	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4137	401 105 4601	MT-GLAZE	3.9K	JA	1/16W
R4138	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4139	401 105 2102	MT-GLAZE	18K	JA	1/16W
R4140	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4141	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4142	401 105 1600	MT-GLAZE	15K	JA	1/16W
R4143	401 105 3406	MT-GLAZE	27K	JA	1/16W
R4144	401 105 2102	MT-GLAZE	18K	JA	1/16W
R4145	401 105 3406	MT-GLAZE	27K	JA	1/16W
R4146	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4201	401 105 0405	MT-GLAZE	100	JA	1/16W
R4202	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4203	401 105 1600	MT-GLAZE	15K	JA	1/16W
R4204	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4205	401 105 7305	MT-GLAZE	820	JA	1/16W
R4206	401 105 2706	MT-GLAZE	220	JA	1/16W
R4207	401 105 3901	MT-GLAZE	33	JA	1/16W
R4208	401 105 5202	MT-GLAZE	470	JA	1/16W
R4209	401 105 5509	MT-GLAZE	470K	JA	1/16W
R4210	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4211	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4212	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4213	401 105 8005	MT-GLAZE	1M	JA	1/16W
R4214	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4215	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4217	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4218	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4219	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4220	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4221	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4222	401 105 5202	MT-GLAZE	470	JA	1/16W
R4223	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4224	401 105 8203	MT-GLAZE	68K	JA	1/16W
R4225	401 105 8203	MT-GLAZE	68K	JA	1/16W
R4226	401 105 5202	MT-GLAZE	470	JA	1/16W
R4227	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4228	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4229	401 105 8203	MT-GLAZE	68K	JA	1/16W
R4230	401 105 8203	MT-GLAZE	68K	JA	1/16W
R4231	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4232	401 105 4601	MT-GLAZE	3.9K	JA	1/16W
R4233	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4234	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4235	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4236	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4237	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4238	401 105 5400	MT-GLAZE	47K	JA	1/16W

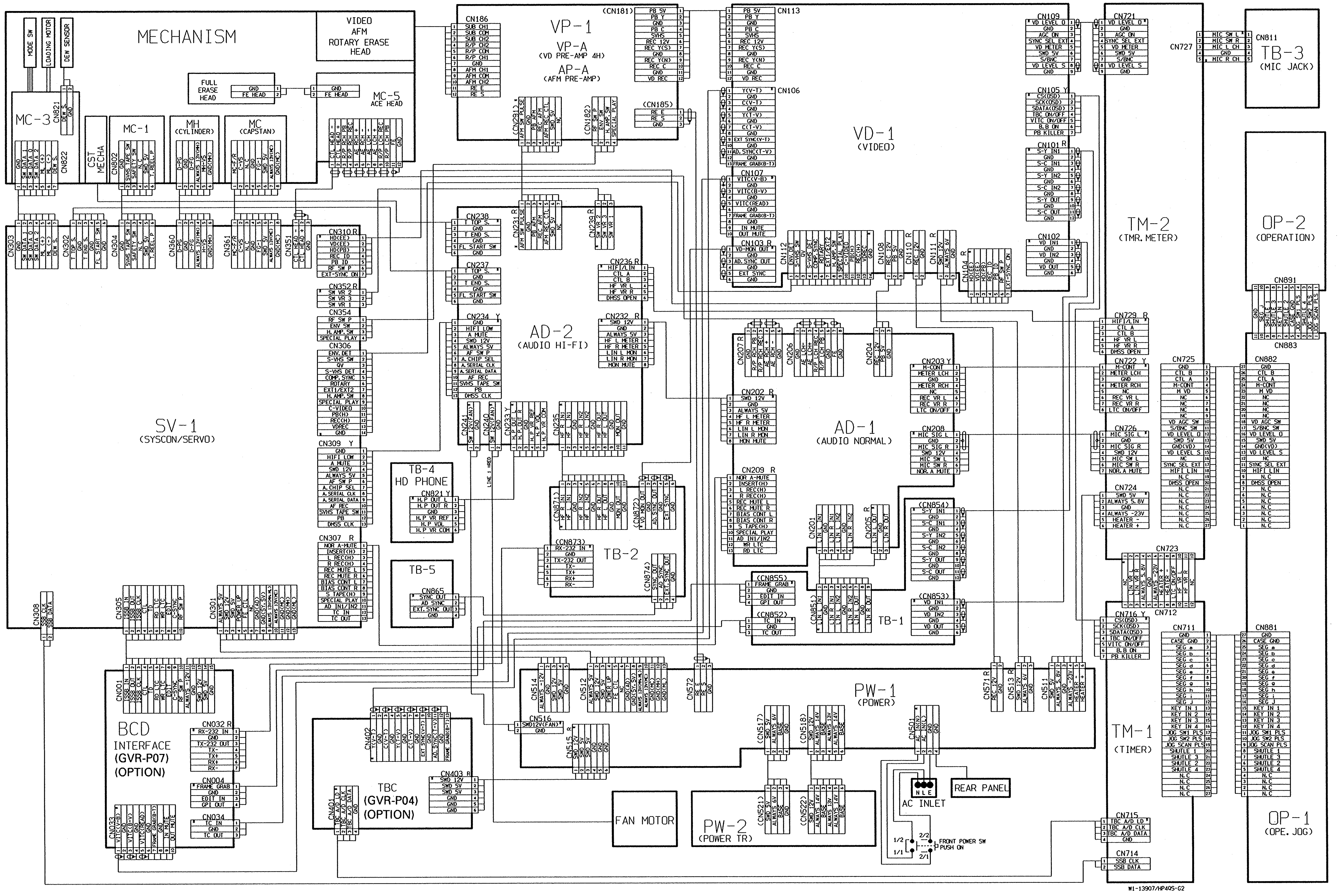
LOCATION	PARTS NO.	DESCRIPTION			
R4239	401 105 7305	MT-GLAZE	820	JA	1/16W
R4240	401 105 7305	MT-GLAZE	820	JA	1/16W
R4241	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4242	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4243	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4244	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4245	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4246	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4247	401 105 1600	MT-GLAZE	15K	JA	1/16W
R4248	401 105 7305	MT-GLAZE	820	JA	1/16W
R4249	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4250	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4251	401 105 7305	MT-GLAZE	820	JA	1/16W
R4252	401 105 0405	MT-GLAZE	100	JA	1/16W
R4253	401 105 3406	MT-GLAZE	27K	JA	1/16W
R4254	401 105 3406	MT-GLAZE	27K	JA	1/16W
R4255	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4256	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4257	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4258	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4259	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4260	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4261	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4263	401 105 3901	MT-GLAZE	33	JA	1/16W
R4264	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4265	401 105 8005	MT-GLAZE	1M	JA	1/16W
R4266	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4267	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4268	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4269	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4270	401 105 1600	MT-GLAZE	15K	JA	1/16W
R4271	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4272	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4273	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4274	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4275	401 105 4205	MT-GLAZE	33K	JA	1/16W
R4276	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4277	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4278	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4279	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4280	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4281	401 105 2102	MT-GLAZE	18K	JA	1/16W
R4282	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4283	401 105 2102	MT-GLAZE	18K	JA	1/16W
R4284	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4285	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4286	401 105 0405	MT-GLAZE	100	JA	1/16W
R4287	401 105 0405	MT-GLAZE	100	JA	1/16W
R4288	401 105 0405	MT-GLAZE	100	JA	1/16W
R4289	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4290	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4291	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4292	401 105 3901	MT-GLAZE	33	JA	1/16W
R4293	401 105 5905	MT-GLAZE	560	JA	1/16W
R4294	401 113 5300	MT-GLAZE	430	JA	1/16W
R4296	401 105 0702	MT-GLAZE	100K	JA	1/16W
R4297	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4298	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4299	401 105 5400	MT-GLAZE	47K	JA	1/16W
R4301	401 105 2003	MT-GLAZE	1.8K	JA	1/16W
R4302	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4303	401 105 6001	MT-GLAZE	5.6K	JA	1/16W
R4304	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4401	401 105 4205	MT-GLAZE	33K	JA	1/16W
R4402	401 105 3307	MT-GLAZE	2.7K	JA	1/16W
R4403	401 105 5301	MT-GLAZE	4.7K	JA	1/16W
R4404	401 105 0504	MT-GLAZE	1K	JA	1/16W
R4405	401 105 5509	MT-GLAZE	470K	JA	1/16W
R4406	401 105 4205	MT-GLAZE	33K	JA	1/16W
R4407	401 105 2904	MT-GLAZE	22K	JA	1/16W
R4408	401 105 3901	MT-GLAZE	33	JA	1/16W
R4409	401 105 3901	MT-GLAZE	33	JA	1/16W
R4410	401 105 3901	MT-GLAZE	33	JA	1/16W

LOCATION	PARTS NO.	DESCRIPTION			
R4411	401 105 3901	MT-GLAZE	33	JA	1/16W
R4412	401 105 3901	MT-GLAZE	33	JA	1/16W
R4501	401 105 2102	MT-GLAZE	18K	JA	1/16W
R4502	401 105 4106	MT-GLAZE	3.3K	JA	1/16W
R4503	401 105 1600	MT-GLAZE	15K	JA	1/16W
R4504	401 105 6605	MT-GLAZE	6.8K	JA	1/16W
R4505	401 105 1600	MT-GLAZE	15K	JA	1/16W
R4506	401 105 6605	MT-GLAZE	6.8K	JA	1/16W
R4507	401 105 0405	MT-GLAZE	100	JA	1/16W
R4508	401 105 0405	MT-GLAZE	100	JA	1/16W
R4509	401 105 0405	MT-GLAZE	100	JA	1/16W
R4510	401 105 0405	MT-GLAZE	100	JA	1/16W
R4511	401 105 0405	MT-GLAZE	100	JA	1/16W
R4512	401 105 0405	MT-GLAZE	100	JA	1/16W
R4513	401 105 0405	MT-GLAZE	100	JA	1/16W
R4515	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4516	401 105 0603	MT-GLAZE	10K	JA	1/16W
R4517	401 105 0405	MT-GLAZE	100	JA	1/16W
R4520	401 105 2805	MT-GLAZE	2.2K	JA	1/16W
R4522	401 105 0405	MT-GLAZE	100	JA	1/16W
R4524	401 105 0405	MT-GLAZE	100	JA	1/16W
(JUMPERS)					
J4002	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4004	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4005	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4007	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4009	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4014	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4016	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4018	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4020	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4021	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4022	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4023	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4025	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4026	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
J4028	401 105 7909	MT-GLAZE	0.000	ZA	1/16W
(SWITCH)					
S4001	636 000 8724	SLIDE SWITCH			

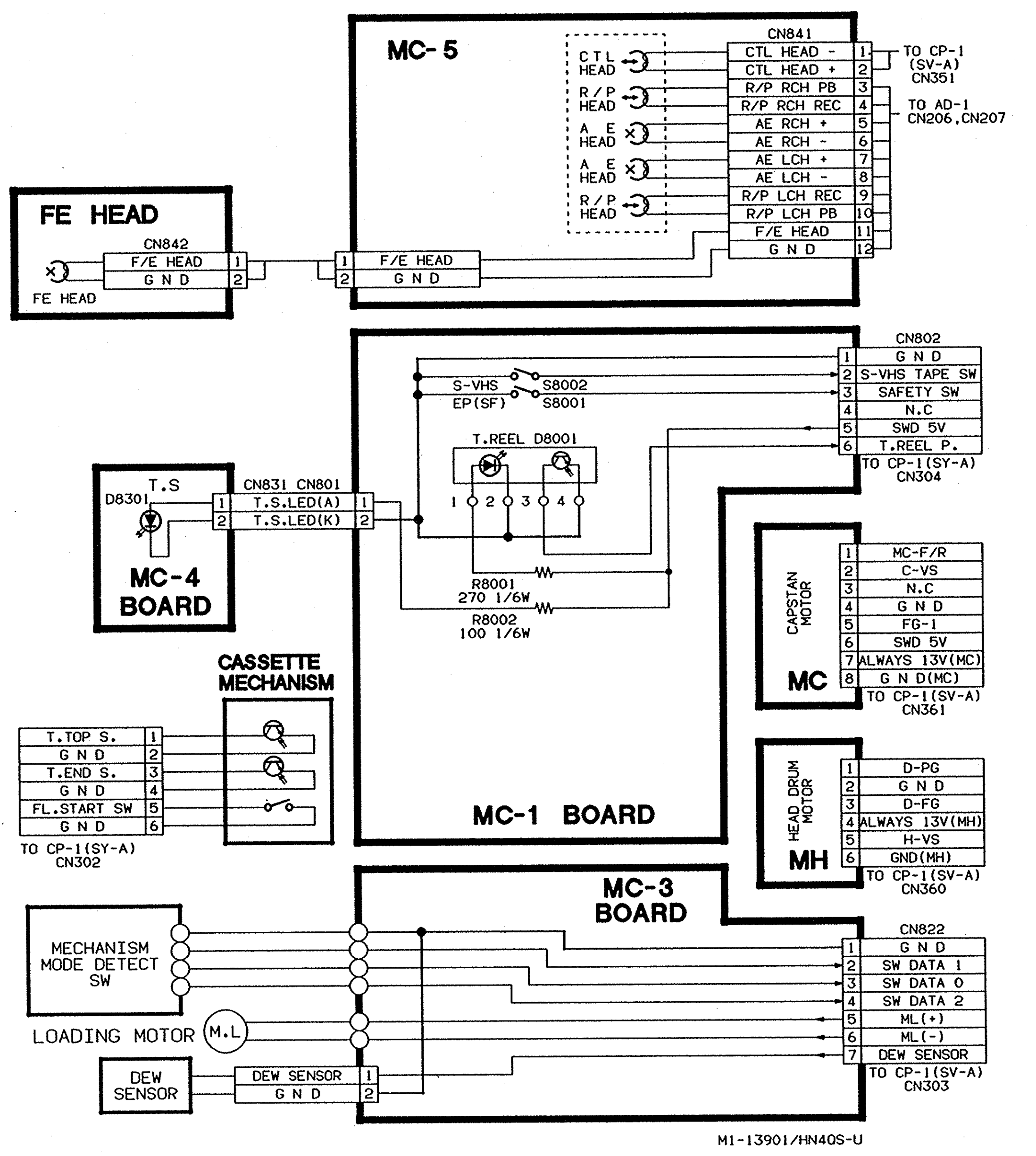
LOCATION	PARTS NO.	DESCRIPTION

9. CIRCUIT DIAGRAMS AND PRINTED WIRING BOARDS (P.W.B.)

9-1. OVERALL WIRING


MECHANISM
VIDEO AFM ROTARY ERASE HEAD
FULL ERASE HEAD
MC-3
MC-1
MH (CYLINDER)
MC (CAPSTAN)
MC-5 ACE HEAD
CST MECHA
VP-1
VP-A (VD PRE-AMP 4H)
AP-A (AFM PRE-AMP)
VD-1 (VIDEO)
TM-2 (TMR. METER)
TB-3 (MIC JACK)
OP-2 (OPERATION)
SV-1 (SYSCON/SERVO)
AD-2 (AUDIO HI-FI)
AD-1 (AUDIO NORMAL)
TB-4 HD PHONE
TB-5
TB-2
TB-1
PW-1 (POWER)
BCD INTERFACE (GVR-P07) (OPTION)
TBC (GVR-P04) (OPTION)
FAN MOTOR
PW-2 (POWER TR)
AC INLET
REAR PANEL
FRONT POWER SW PUSH ON
TM-1 (TIMER)
OP-1 (OPE. JOG)
M1-13907/HP40S-G2

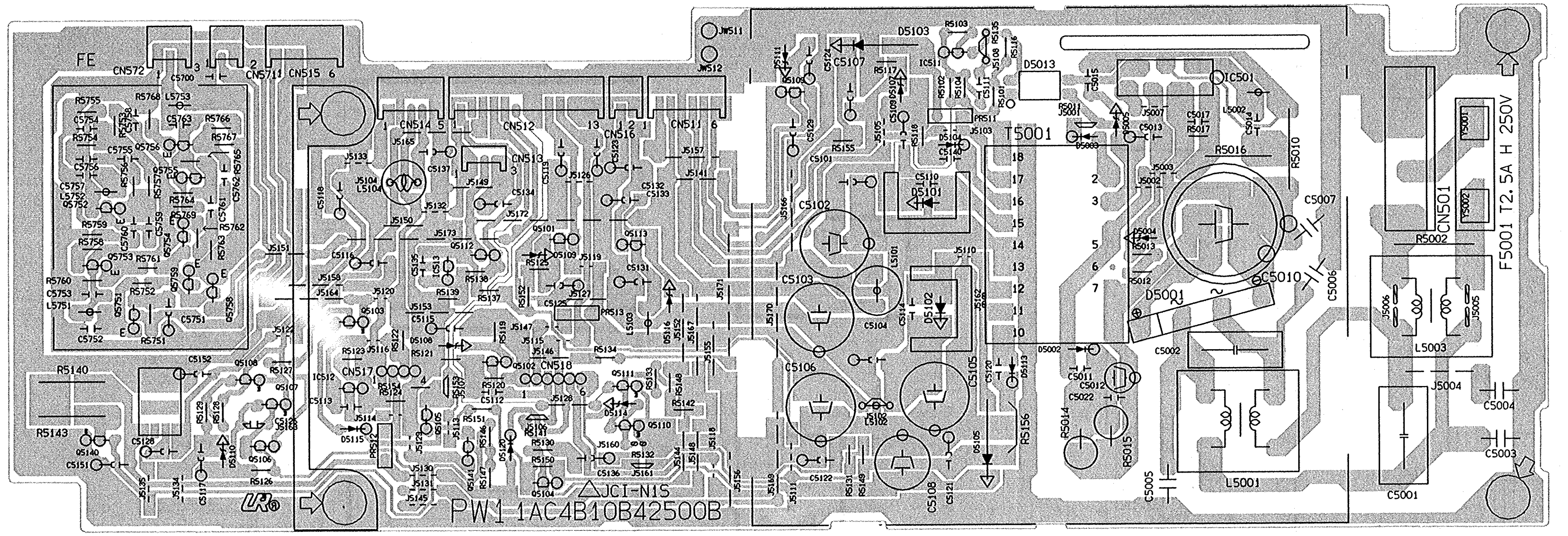
9-2. MECHANISM CONNECTION


MC-5
CN841
CTL HEAD
R/P HEAD
A E HEAD
TO CP-1 (SV-A) CN351
TO AD-1 CN206, CN207
FE HEAD
CN842
F/E HEAD
GND
CN802
S-VHS
EP(SF)
S8002
S8001
T.REEL D8001
TO CP-1(SY-A) CN304
T.S
D8301
MC-4 BOARD
CN831 CN801
T.S.LED(A)
T.S.LED(K)
R8001 270 1/6W
R8002 100 1/6W
CAPSTAN MOTOR
MC
TO CP-1(SV-A) CN361
CASSETTE MECHANISM
T.TOP S.
T.END S.
FL.START SW
TO CP-1(SY-A) CN302
HEAD DRUM MOTOR
MH
TO CP-1(SV-A) CN360
MC-1 BOARD
MC-3 BOARD
MECHANISM MODE DETECT SW
LOADING MOTOR
M.L
DEW SENSOR
CN822
TO CP-1(SV-A) CN303
M1-13901/HN40S-U

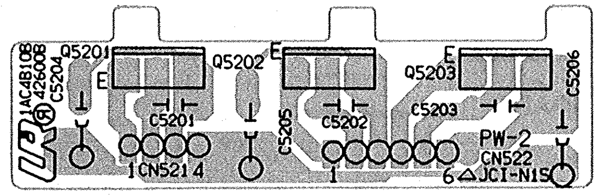
NOTES:

1. All resistance values in "OHMS" unless otherwise noted.
   (K=1,000 ; M=1,000,000)
2. All capacitance values in "μF" unless otherwise noted.
   p=pico farad ; μ ,u or U=micro farad
3. All inductance values in "μH" unless otherwise noted.
   μ ,u or U=micro henry ; m=milli henry

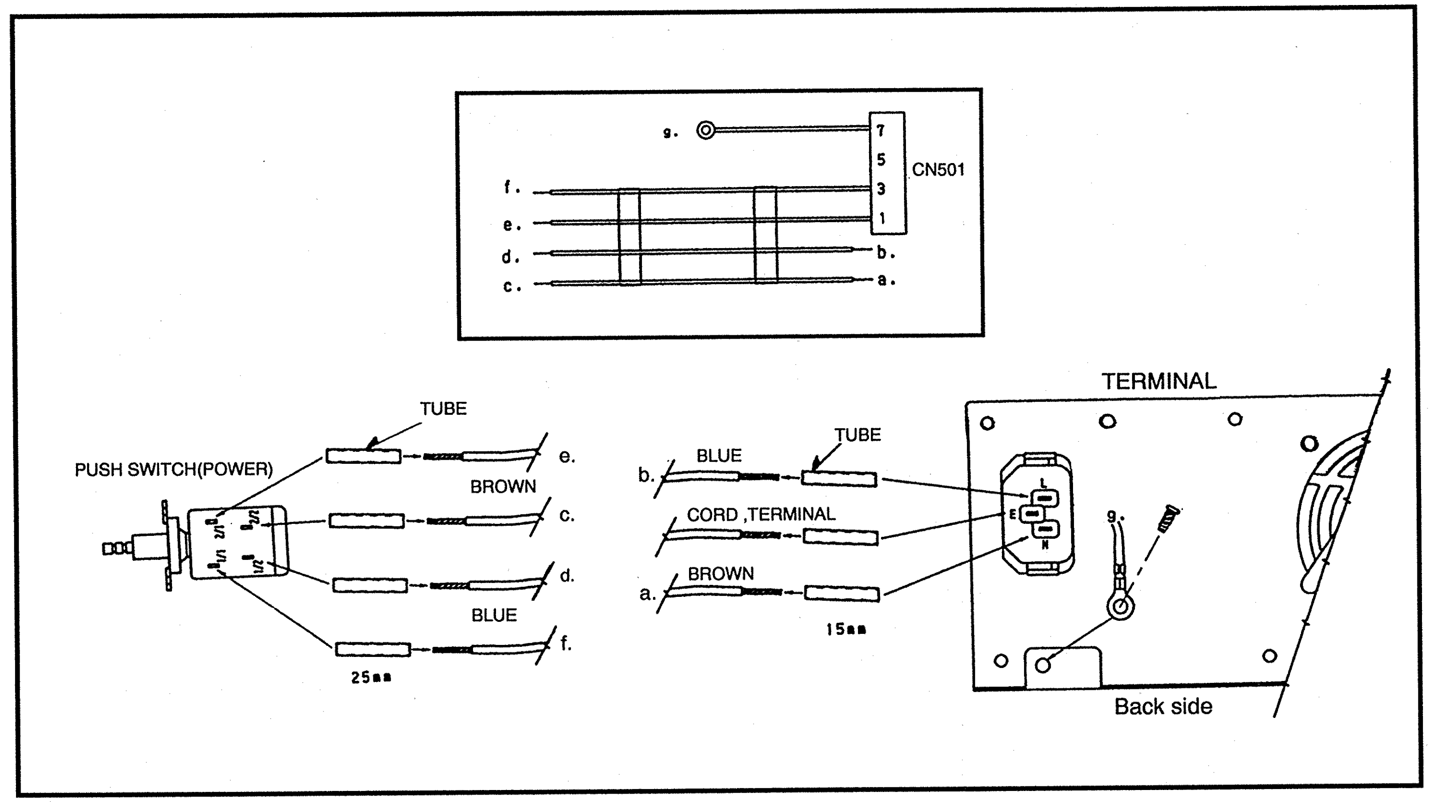
9-3. PW-1 P.W.B.


FE
CN572
CN571
CN515
CN514
CN512
CN516
CN511
CN517
CN518
T5001
D5013
D5001
C5102
C5103
C5105
C5106
C5108
L5001
L5003
CN501
F5001 T2.5A H 250V
R5140
R5143
PW-1 1AC4B10B42500B
△JCI-N15

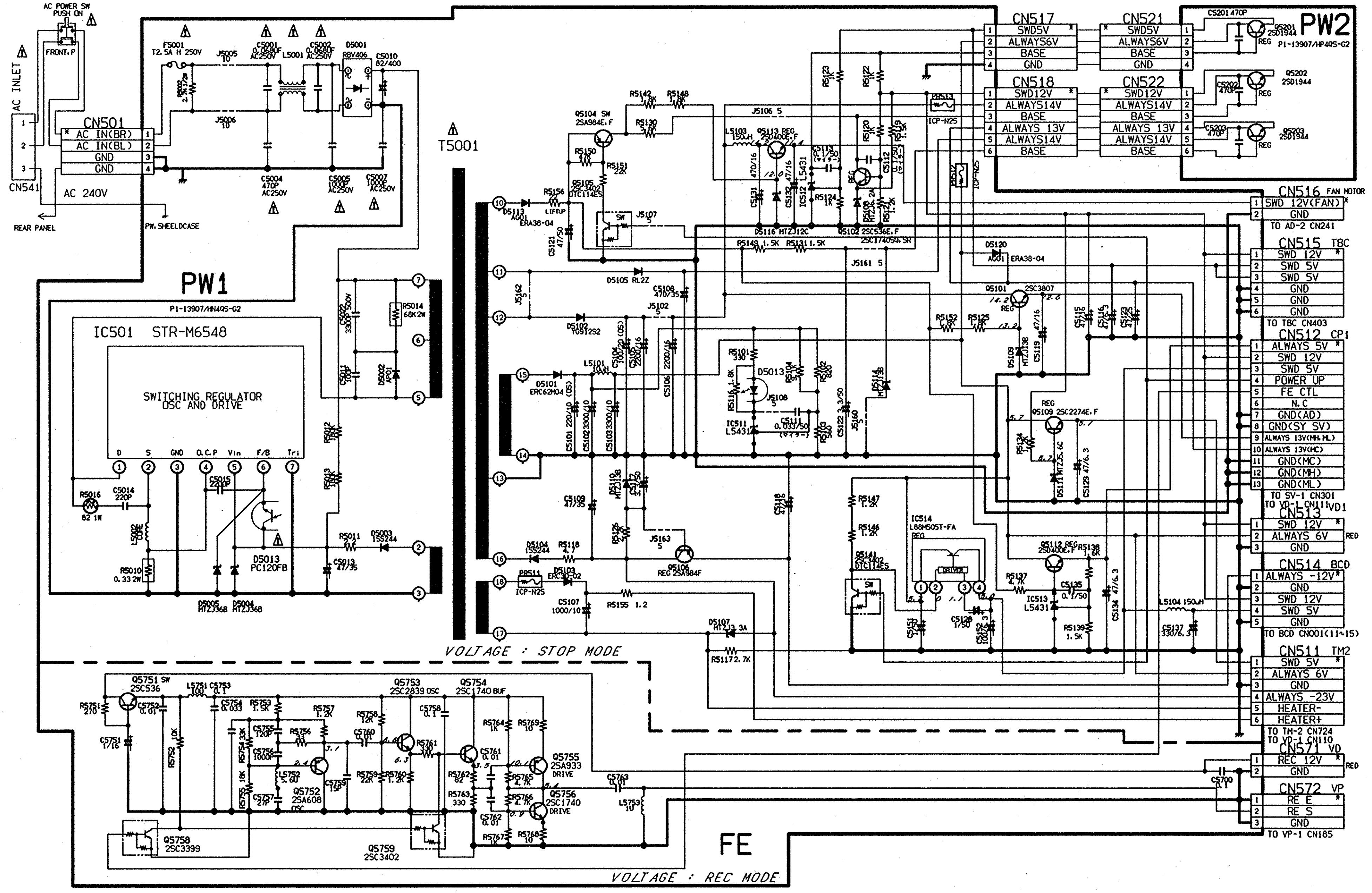
9-4. PW-2 P.W.B.


Q5201
Q5202
Q5203
C5201
C5202
C5203
C5205
C5206
CN521
CN522
PW-2
△JCI-N15

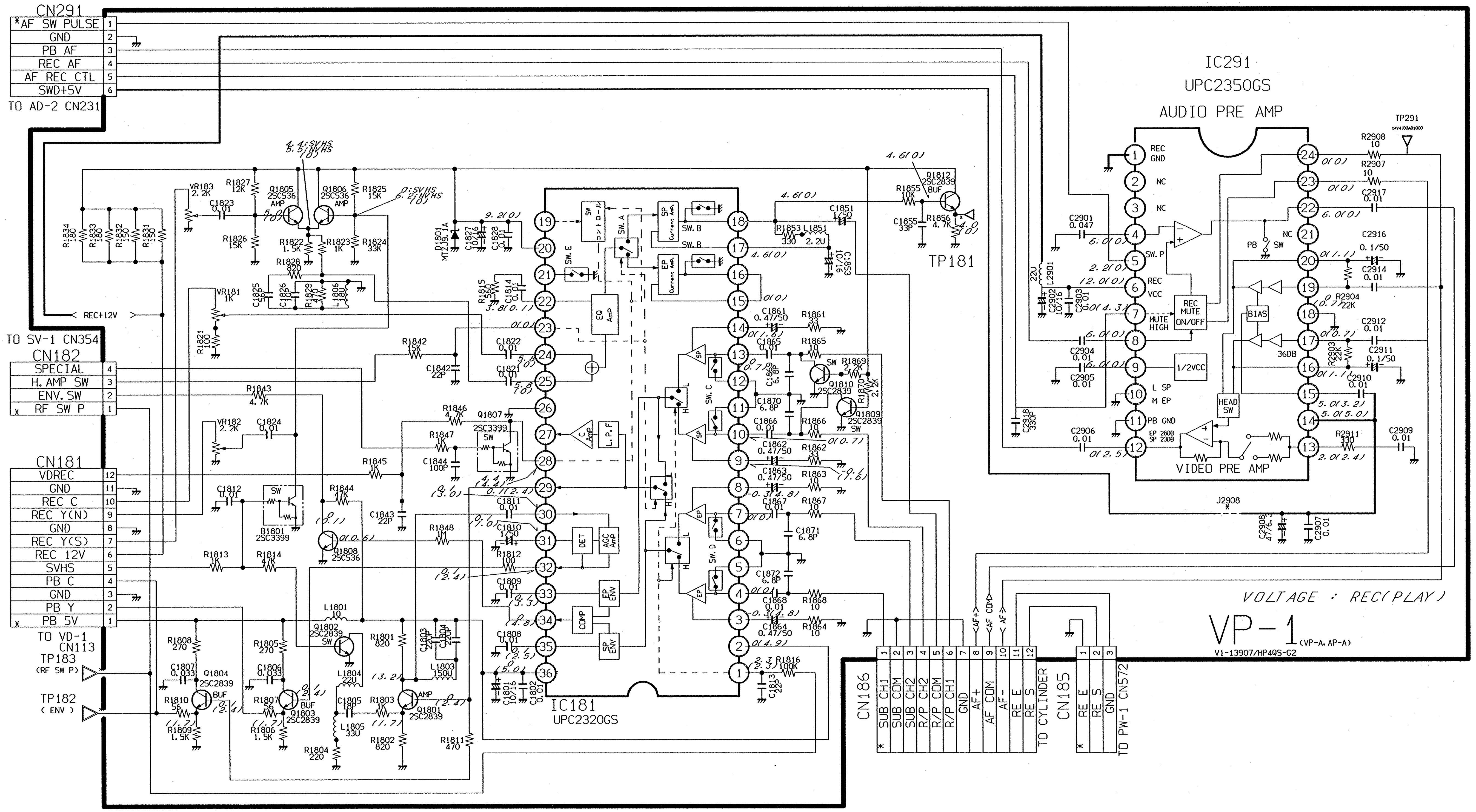
9-5. SWITCH AND TERMINAL CONNECTION


CN501
g.
7
5
3
1
f.
e.
d.
c.
b.
a.
TUBE
PUSH SWITCH(POWER)
BROWN
BLUE
25mm
e.
c.
d.
f.
BLUE
TUBE
b.
CORD ,TERMINAL
BROWN
a.
15mm
TERMINAL
Back side

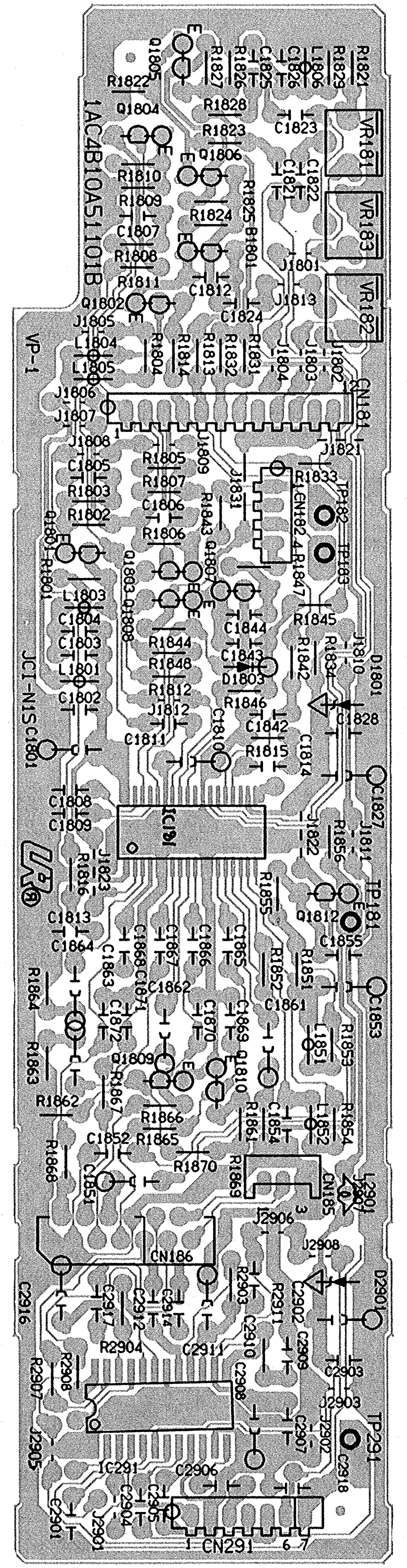
9-6 PW-1,2 BOARD POWER SUPPLY


AC POWER SW PUSH ON
FRONT.P
AC INLET
CN501
AC IN(BR)
AC IN(BL)
GND
GND
CN541
AC 240V
REAR PANEL
PW.SHEELDCASE
F5001 T2.5A H 250V
T5001
PW1
IC501 STR-M6548
SWITCHING REGULATOR OSC AND DRIVE
D
S
GND
O.C.P
Vin
F/B
Tri
D5013 PC120FB
CN517
SWD5V
ALWAYS6V
BASE
GND
CN518
SWD12V
ALWAYS14V
BASE
ALWAYS 13V
ALWAYS14V
BASE
CN521
CN522
PW2
Q5201 2SD1944
Q5202 2SD1944
Q5203 2SD1944
CN516 FAN MOTOR
SWD 12V(FAN)
GND
TO AD-2 CN241
CN515 TBC
SWD 12V
SWD 5V
SWD 5V
GND
GND
GND
TO TBC CN403
CN512 CP1
ALWAYS 5V
SWD 12V
SWD 5V
POWER UP
FE CTL
N.C
GND(AD)
GND(SY 5V)
ALWAYS 13V(MH.ML)
ALWAYS 13V(MC)
GND(MC)
GND(MH)
GND(ML)
TO SV-1 CN301
TO VD-1 CN115
CN513 VD1
SWD 12V
ALWAYS 6V
GND
CN514 BCD
ALWAYS -12V
GND
SWD 12V
SWD 5V
GND
TO BCD CN001(11-15)
CN511 TM2
SWD 5V
ALWAYS 6V
GND
ALWAYS -23V
HEATER-
HEATER+
TO TM-2 CN724
TO VD-1 CN110
CN571 VD
REC 12V
GND
CN572 VP
RE E
RE S
GND
TO VP-1 CN105
IC514 L88MS05T-FA
IC513 L5431
IC511 L5431
Q5751 2SC536
Q5752 2SA608
Q5753 2SC2839
Q5754 2SC1740
Q5755 2SA933
Q5756 2SC1740
Q5758 2SC3399
Q5759 2SC3402
FE
VOLTAGE : STOP MODE
VOLTAGE : REC MODE

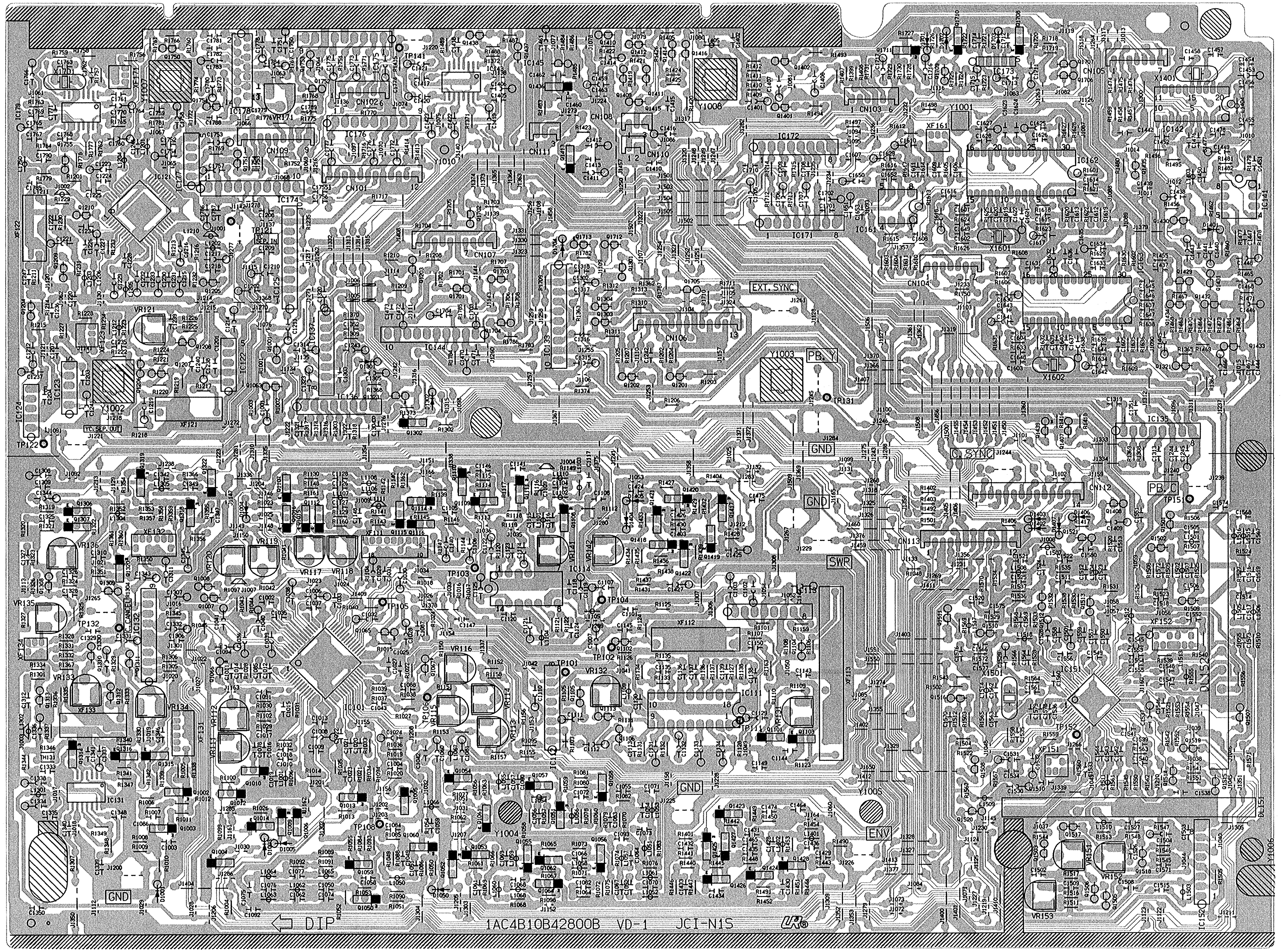
9-7. VP-1 BOARD (VP-A, AP-A) PRE-AMP


CN291
AF SW PULSE
GND
PB AF
REC AF
AF REC CTL
SWD+5V
TO AD-2 CN231
TO SV-1 CN354
CN182
SPECIAL
H. AMP SW
ENV. SW
RF SW P
CN181
VDREC
GND
REC C
REC Y(N)
GND
REC Y(S)
REC 12V
SVHS
PB C
GND
PB Y
PB 5V
TO VD-1 CN113
TP183 (RF SW P)
TP182 (ENV)
REC+12V
IC181
UPC2320GS
IC291
UPC2350GS
AUDIO PRE AMP
VIDEO PRE AMP
TP181
TP291
CN186
SUB CH1
SUB COM
SUB CH2
R/P COM
R/P CH1
GND
AF+
AF COM
AF-
RE E
RE S
TO CYLINDER
CN185
RE E
RE S
GND
TO PW-1 CN572
VOLTAGE : REC(PLAY)
VP-1 (VP-A, AP-A)
V1-13907/HP49S-G2
Q1801 2SC3399
Q1802 2SC2839
Q1803 2SC2839
Q1804 2SC2839
Q1805 2SC536
Q1806 2SC536
Q1807 2SC3399
Q1808 2SC536
Q1809 2SC2839
Q1810 2SC2839
Q1812 2SC2839
D1801 MTZ3.9A
J2908

9-8. VP-1 P.W.B.

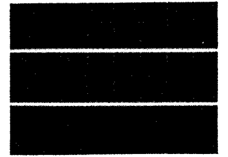
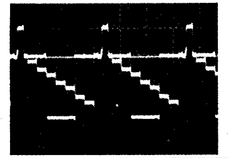
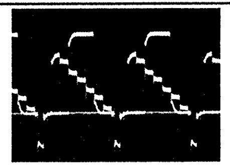
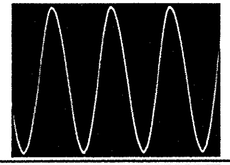
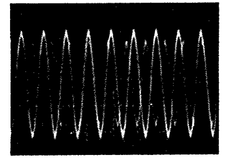
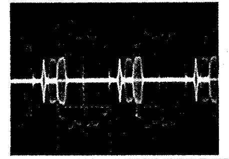
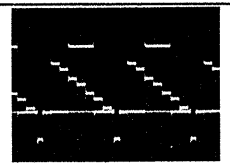
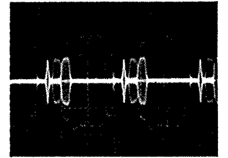
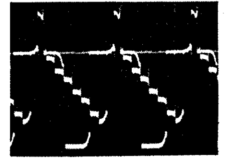
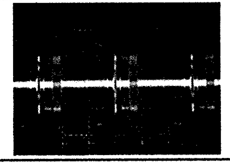
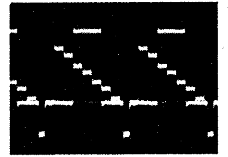
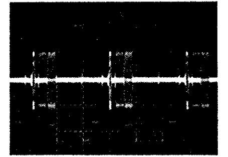
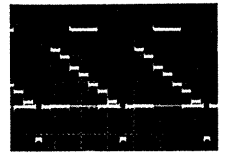
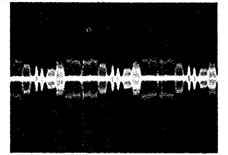
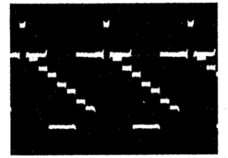
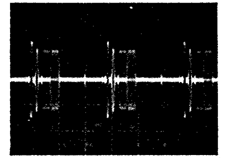
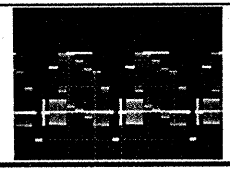

1AC4B10A5110IB
VP-1
JCI-NISC101
IC181
IC291
CN181
CN186
CN291
VR181
VR182
VR183
TP181
TP182
TP183
TP291

9-9. VD-1 P.W.B.


EXT. SYNC
PB. Y
GND
G. SYNC
PB. C
SWR
ENV
DIP
1AC4B10B42800B VD-1 JCI-N1S
IC171
IC172
IC174
IC162
IC135
IC151
IC101
IC111
IC131
Y1001
Y1002
Y1003
Y1004
Y1005
X1601
VR121
VR133
VR135
VR152
VR153
TP122
TP132
TP141

9-10. VIDEO CIRCUIT WAVEFORMS

WF-V-HP4QS

TEST LOCATION	WAVEFORM	MODE / LEVEL	TEST LOCATION	WAVEFORM	MODE / LEVEL
IC 101 Pin 21 (REC FM)		REC,EE 1.0Vp-p	IC 101 Pin 59 (Y OUT)		PLAY 1.8Vp-p
IC 101 Pin 26 (PB FM)		PLAY 0.4Vp-p	IC 151 Pin 1 (Fsc OUT)		REC/PLAY/EE 0.5Vp-p
IC 101 Pin 35		REC (S-VHS) 0.4Vp-p	IC 151 Pin 14 (C OUT)		PLAY 0.7Vp-p
IC 101 Pin 35		REC (N-VHS) 0.4Vp-p	IC 151 Pin 18		PLAY 0.7Vp-p
IC 101 Pin 36		REC (S-VHS) 0.4Vp-p	IC 151 Pin 39		REC 0.8Vp-p
IC 101 Pin 36		PLAY (S-VHS) 0.4Vp-p	IC 151 Pin 40		REC 0.5Vp-p
IC 101 Pin 38		REC (N-VHS) 0.4Vp-p	IC 151 Pin 48 (PB C IN)		PLAY 0.1Vp-p
IC 101 Pin 38		PLAY (N-VHS) 0.4Vp-p	IC 151 Pin 51 (REC C OUT)		REC 0.5Vp-p
IC 101 Pin 59 (Y OUT)		REC 1.8Vp-p			

9-11. VD-1 BOARD VIDEO

XF112 3.58MHz LPF
XF113 6MHz LPF
REC/PB
IC113
VR131 REC SUB EM
IC112
VR132 S PB LEV
IC111 VC2076DP EMPHASIS
Process
VR141 CCD LEV
XF111 6MHz LPF
IC114 CXL5505P CCD DELAY
IC123 AMP
IC124 AMP
4.43MHz BPF
XF122 NTSC LPF
IC125 BA7604N S/COMP
IC121 MC141625AFU COMB FILTER
XF121 7MHz LPF
IC122 AMP
IC177 AMP
IC175 V1/V2/S INPUT SW
IC176 S1/S2 INPUT SW
IC179
IC174 S/C1/C2
SYNC SEP IC173
VR119 N D/C
VR120 S D/C
VR117 N W/C
VR118 S W/C
VR113 N CAR
VR114 S CAR
VR115 N DEV
VR116 S DEV
IC101 M52365P Y PROCESS
IC137 NJM2235L PB/EE
IC135 NJM2234L PB/EE
IC136 NJM2235L V SYNC
IC171 NJM2235L SYNC EXT/INT
IC172 NJM2234L SYNC EXT/INT
TBC ON/OFF
IC133 BA7604N
IC144 BA7605N VITC ON/OFF
IC132
IC131 CXL1504M
CCD 2H DELAY
IC142 SYNC SEP
IC141
IC143 Y/C AMP & MIX
CN109 TO TM-2 CN721
CN102 TO TB-1 CN853
CN101 TO TB-1 CN854
CN103 TO TBC CN402
CN107 TO BCD CN033
CN105 TO TM-1 CN716
CN106 TO TBC CN402
CN112 TO SV-1 CN306
CN104 TO SV-1 CN310
CN111 TO PM-1 CN513
CN108 TO AD-1 CN204
CN110 TO PM-1 CN571
CN113 TO VP-1 CN181
IC151 M52370AFP C PROCESS
XF152 4.43MHz BPF
2H COMB FILTER DL152
2H DL DL151
CNR PHASE
SPECIAL PLAY
IC152 NJM2234L
XF151 10.12MHz TRAP
SYNC SEP
IC161 BA7046
REC C ID
IC162 M51371SP
PB C ID
IC163 M51371SP
IC145 L5431
VD-1

9-12. VIDEO CIRCUIT VOLTAGE CHART

PIN	REC	PLAY
IC101		
1	5.0	5.0
4	2.6	2.6
5	1.3	3.4
6	4.9	4.9
8	3.3	2.3
9	0	0
10	3.1	3.2
11	0	0.4
12	2.5	2.5
13	5.0	4.9
15	5.0	5.0
16	3.5	3.3
19	3.1	2.9
20	3.0	3.0
21	2.9	2.5
22	0.6	4.5
24	2.9	3.2
25	2.2	2.2
26	5.0	4.1
27	2.3	2.6
28	2.3	2.6
30	3.0	3.0
31	3.3	3.3
32	2.3	2.3
33	3.0	3.0
34	2.3	2.3
35	2.5	2.5
36	2.8	2.8
37	4.9	2.9
38	2.8	2.8
39	2.6	2.3
40	1.7	2.1
42	3.5	0
43	2.6	2.6
44	2.1	3.8
45	0	0
46	0	0
48	0	0
49	1.5	1.4
50	3.4	3.4
52	3.4	3.4
55	0.4	0.4
56	1.9	0.1
57	0.8	1.6
58	3.1	3.1
59	1.5	1.5
60	2.1	2.5
IC111		
1	2.0	2.0
2	0.2	5.0
3	3.3	3.3
4	3.4	3.4
6	2.2	2.2
7	2.0	2.0
9	1.4	1.4
11	2.9	2.8
12	2.9	2.8
14	2.8	2.8
15	2.8	2.8
16	1.9	2.0
18	2.9	2.0
IC112		
1	3.0	3.0
2	0	4.1
3	3.0	3.0
7	2.2	2.2
IC113		
1	2.3	2.4
2	0	4.1
3	2.7	2.3
7	1.6	1.6

PIN	REC	PLAY
IC114		
1	2.0	2.0
2	2.5	2.5
4	2.3	2.3
8	2.3	2.3
10	2.1	2.1
11	2.1	2.1
13	1.1	1.1
IC121		
4	0.9	0.9
5	1.5	1.5
8	0.9	0.9
10	1.2	1.2
13	4.6	4.6
14	1.5	1.5
15	3.0	3.0
16	2.8	2.8
45	2.2	2.2
IC122		
1	1.9	1.9
4	2.4	2.4
IC123		
1	2.0	2.0
4	2.6	2.6
IC124		
1	1.5	1.5
4	2.1	2.1
IC131		
1	2.0	2.0
2	2.5	2.5
6	2.1	2.1
10	2.4	2.4
12	1.9	1.9
13	1.9	1.9
15	0.9	0.9
IC132		
1	2.8	2.8
2	0	0
6	2.7	2.7
8	1.4	1.4
IC133 (TBC, ON)		
1	2.5	2.5
3	2.5	2.5
4	4.9	4.9
	(0.2	0.2)
5	1.8	1.8
	(1.8	1.8)
6	1.8	1.8
8	2.5	2.5
	(2.5	2.5)
10	2.5	2.5
IC135		
1	3.0	3.0
2	0	0
4	0	2.2
5	3.0	3.0
7	2.2	2.2
IC136		
1	2.4	2.4
2	0	0
3	2.3	2.3
4	0	0
5	2.0	2.0
7	1.7	1.7

PIN	REC	PLAY
IC137		
1	2.4	2.4
4	0	2.2
5	2.4	2.4
7	1.6	1.6
IC141		
1	2.1	2.1
2	4.7	4.7
4	5.0	5.0
6	2.6	2.6
8	2.4	2.4
IC142		
1	2.2	2.2
2	2.3	2.3
3	3.5	3.5
4	4.3	4.3
5	4.6	4.6
6	5.0	5.0
8	2.4	2.4
10	2.5	2.5
16	5.0	5.0
17	0	0
IC143		
5	1.9	1.9
6	0	0
7	2.0	2.0
9	1.9	1.9
10	2.0	2.0
11	2.0	2.0
12	1.9	1.9
14	0	0
15	2.3	2.3
IC144		
1	2.5	2.5
3	2.5	2.5
4	4.9	4.9
5	1.8	1.8
IC151		
1	2.8	2.9
2	3.6	3.7
3	4.9	4.9
5	0.5	0.5
6	1.9	2.0
8	3.2	3.2
9	3.2	3.2
12	4.4	3.5
14	4.5	2.6
16	3.1	2.9
17	3.1	2.9
18	4.4	2.5
19	5.0	2.5
20	4.6	3.6
22	4.8	3.5
23	2.9	2.9
24	3.1	3.1
25	2.7	2.7
26	2.9	2.9
27	2.5	2.5
30	2.7	2.7
31	2.5	2.5
32	3.3	3.2
35	2.4	2.4
37	3.7	3.7
38	2.9	2.9
39	1.8	1.7
40	3.2	3.2
41	2.6	2.6
42	4.3	4.3
43	2.9	2.9
44	2.6	2.6
45	3.6	3.6

PIN	REC	PLAY
IC151		
46	2.3	2.4
47	2.9	1.8
48	1.8	2.9
49	2.9	2.8
51	2.9	2.9
52	2.4	2.4
53	3.8	3.8
55	2.7	3.0
56	3.8	3.8
IC152		
1	3.0	3.0
2	0	0
3	3.0	3.0
7	2.3	2.3
IC161		
1	2.0	2.0
2	4.6	4.6
4	3.9	3.9
6	2.2	2.2
8	2.1	2.1
IC162		
1	2.8	-
2	2.4	-
4	2.4	-
5	3.0	-
6	3.0	-
7	4.7	-
8	3.0	-
9	2.4	-
10	3.0	-
11	2.8	-
12	2.5	-
13	3.4	-
23	2.7	-
24	2.7	-
26	4.2	-
27	2.9	-
28	2.9	-
29	2.5	-
IC163		
1	-	2.8
2	-	2.4
4	-	2.4
5	-	3.0
6	-	3.0
7	-	4.2
8	-	3.0
9	-	2.3
10	-	3.0
11	-	2.8
12	-	2.5
13	-	3.3
23	-	2.2
24	-	2.7
26	-	4.2
27	-	2.9
28	-	2.9
29	-	2.5
IC171		
1	2.4	2.4
2	0	0
3	2.4	2.4
4	0	0
5	2.1	2.1
7	1.7	1.7

PIN	REC	PLAY
Q1401		
B	4.2	4.2
C	-	-
E	5.0	5.0
Q1402		
B	-	-
C	-	-
E	2.5	2.5
Q1418		
B	-	-
C	5.0	5.0
E	2.4	2.4
Q1419		
B	1.9	0
C	-	-
E	2.8	1.3
Q1420		
B	0.9	0.9
C	-	-
E	1.9	1.1
Q1421		
B	-	-
C	-	-
E	4.6	4.6
Q1422		
B	2.4	2.4
C	-	-
E	1.8	1.8
Q1423		
B	1.5	1.5
C	-	-
E	1.0	1.0
Q1425		
B	0.6	2.2
C	-	-
E	1.3	1.6
Q1426		
B	-	-
C	-	-
E	0.3	2.3
Q1427		
B	-	-
C	-	-
E	0.7	2.9
Q1428		
B	1.7	1.7
C	5.0	5.0
E	1.0	1.0
Q1430		
B	2.1	2.1
C	-	-
E	2.5	2.5
Q1431		
B	-	-
C	-	-
E	5.4	5.4
Q1432		
B	3.8	3.8
C	6.0	6.0
E	3.1	3.1
Q1433		
B	3.4	3.4
C	-	-
E	2.7	2.7
Q1434		
B	3.4	3.4
C	-	-
E	2.7	2.7
Q1435		
B	-	-
C	-	-
E	1.9	1.9

PIN	REC	PLAY
Q1437		
B	1.8	1.8
C	-	-
E	2.4	2.4
Q1438		
B	3.2	3.2
C	-	-
E	2.6	2.6
Q1501		
B	-	-
C	-	-
E	5.7	5.7
Q1502		
B	0.9	0.9
C	5.0	5.0
E	0.3	0.3
Q1503		
B	3.7	3.7
C	-	-
E	3.1	3.1
Q1505		
B	-	-
C	-	-
E	2.5	2.5
Q1506		
B	-	-
C	3.2	3.2
E	1.3	1.3
Q1509		
B	0.9	0.9
C	4.1	4.1
E	1.6	1.6
Q1512		
B	1.6	1.6
C	3.0	3.0
E	0.9	0.9
Q1513		
B	2.9	2.9
C	5.0	5.0
E	2.3	2.3
Q1516		
B	2.8	2.8
C	4.9	4.9
E	2.2	2.2
Q1517		
B	1.3	1.3
C	-	-
E	1.9	1.9
Q1518		
B	2.0	2.0
C	3.4	3.4
E	1.3	1.3
Q1701		
B	2.8	2.8
C	-	-
E	3.5	3.5
Q1702		
B	1.8	1.8
C	-	-
E	2.5	2.5
Q1703		
B	2.7	2.7
C	-	-
E	2.0	2.0
Q1704		
B	1.8	1.8
C	-	-
E	2.5	2.5
Q1705		
B	-	-
C	-	-
E	1.4	1.4

PIN	REC	PLAY
Q1706		
B	-	-
C	0	0
E	-	-
Q1707		
B	-	-
C	0.6	0.6
E	-	-
Q1708		
B	0	0
C	-	-
E	0	0
Q1709		
B	0.7	0.7
C	-	-
E	1.4	1.4
Q1710		
B	0.1	0
C	-	-
E	0.7	0.7
Q1711		
B	2.8	2.8
C	-	-
E	3.5	3.5
Q1750		
B	0.6	0.6
C	-	-
E	1.2	1.2
Q1751		
B	3.3	3.3
C	-	-
E	3.9	3.9
Q1752		
B	1.6	1.6
C	-	-
E	2.2	2.2
Q1754		
B	-	-
C	-	-
E	2.1	2.1
Q1755		
B	1.6	1.6
C	-	-
E	1.1	1.1

PIN	REC	PLAY
IC172		
1	3.0	3.0
2	0	0
3	3.0	3.0
4	0	0
5	3.0	3.0
7	2.3	2.3
IC173		
1	2.6	2.6
2	5.0	5.0
4	5.0	5.0
IC177		
1	1.3	1.3
4	2.0	2.0
IC178		
1	0.8	0.8
2	3.0	3.0
4	1.9	1.9
5	1.6	1.6
6	2.2	2.2
7	3.0	3.0
11	2.6	2.6
12	3.0	3.0
13	3.0	3.0
14	1.8	1.8
IC179		
1	3.5	3.5
2	0.7	0.7
3	2.5	2.5
4	3.4	3.4
9	3.5	3.5
12	3.3	3.3
13	2.1	2.1
14	2.6	2.6
15	1.0	1.0
16	2.5	2.5

PIN	REC	PLAY
Q1001		
B	1.8	1.8
C	-	-
E	2.4	2.4
Q1002		
B	0.8	0.8
C	-	-
E	1.5	1.5
Q1050		
B	2.6	-
C	-	-
E	1.9	-
Q1051		
B	-	1.3
C	-	-
E	-	1.9
Q1053		
B	-	1.0
C	-	-
E	-	2.1
Q1054		
B	-	2.8
C	-	-
E	-	2.1
Q1055		
B	-	1.8
C	-	1.0
E	-	1.0
Q1056		
B	-	2.2
C	-	3.5
E	-	1.5
Q1057		
B	-	1.9
C	-	2.8
E	-	1.2
Q1058		
B	-	2.0
C	-	3.8
E	-	1.3
Q1059		
B	2.3	-
C	4.4	-
E	1.8	-
Q1060		
B	2.8	-
C	4.7	-
E	2.1	-
Q1062		
B	-	1.5
C	-	-
E	-	1.8
Q1063		
B	4.0	4.0
C	-	-
E	3.3	3.3
Q1101		
B	2.8	2.8
C	-	-
E	3.5	3.5
Q1102		
B	3.6	3.6
C	-	-
E	3.0	3.0
Q1103		
B	3.7	3.7
C	-	-
E	3.0	3.0
Q1104		
B	2.3	2.3
C	-	-
E	1.6	1.6
Q1105		
B	3.9	3.9
C	-	-
E	4.5	4.5

PIN	REC	PLAY
Q1106		
B	0.6	0.6
C	-	-
E	1.3	1.3
Q1108		
B	0.7	0.7
C	-	-
E	1.4	1.4
Q1109		
B	1.2	1.2
C	-	-
E	1.8	1.8
Q1110		
B	2.6	2.6
C	-	-
E	1.9	1.9
Q1111		
B	3.7	3.7
C	1.6	1.6
E	3.1	3.1
Q1113		
B	1.4	1.4
C	-	-
E	2.0	2.0
Q1114		
B	3.5	3.5
C	-	-
E	2.9	2.9
Q1115		
B	1.7	1.7
C	3.5	3.5
E	1.1	1.1
Q1116		
B	1.7	1.7
C	-	-
E	1.1	1.1
Q1201		
B	2.3	2.3
C	-	-
E	2.9	2.9
Q1202		
B	1.7	1.7
C	-	-
E	2.3	2.3
Q1203		
B	1.6	1.6
C	-	-
E	2.3	2.3
Q1204		
B	3.2	3.2
C	-	-
E	2.6	2.6
Q1205		
B	5.5	5.5
C	-	-
E	6.2	6.2
Q1206		
B	4.1	4.1
C	-	-
E	-	-
Q1207		
B	4.2	4.2
C	-	-
E	3.6	3.6
Q1208		
B	6.1	6.1
C	-	-
E	5.5	5.5
Q1209		
B	-	-
C	-	-
E	1.6	1.6

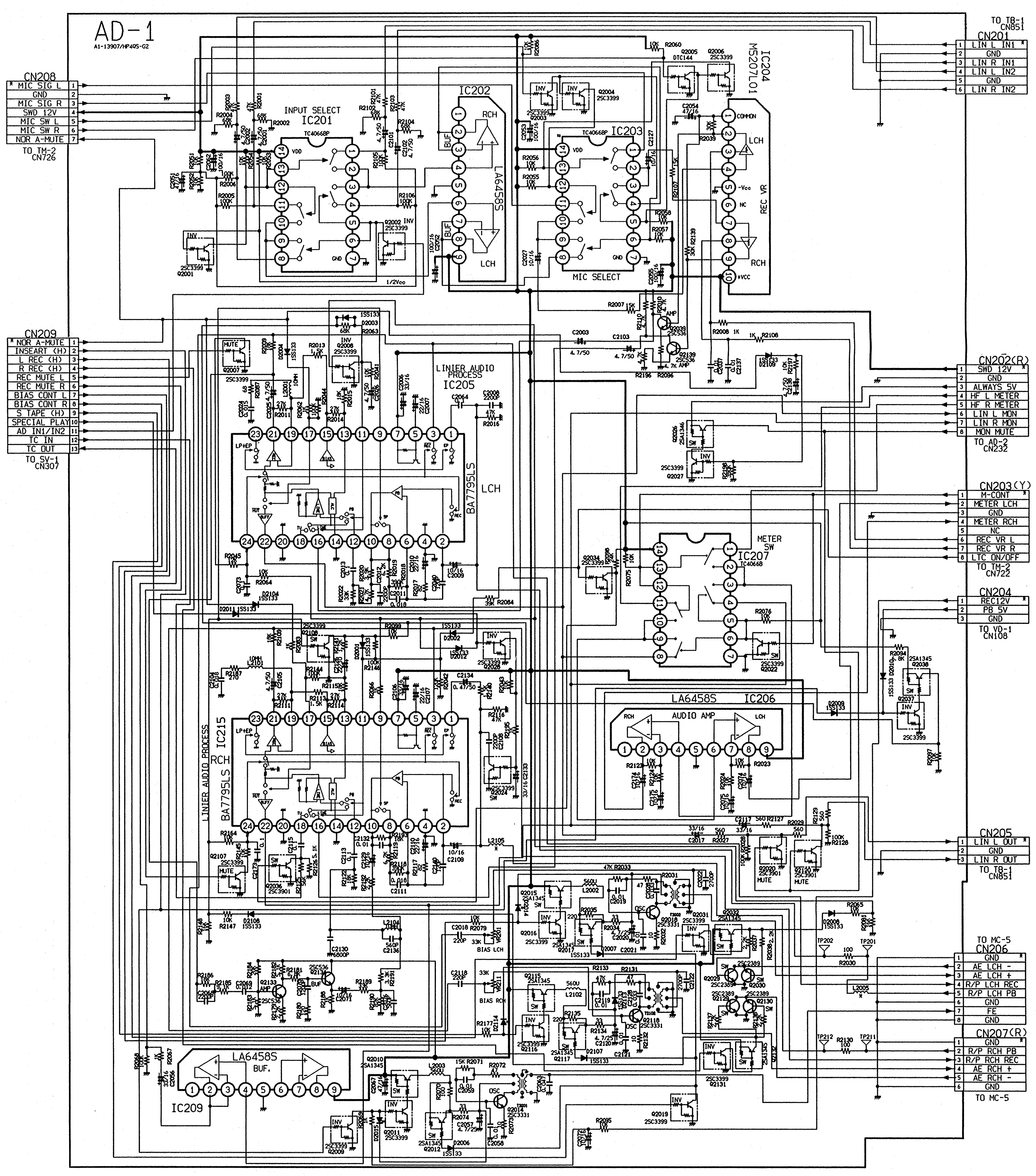
PIN	REC	PLAY
Q1210		
B	-	-
C	-	-
E	1.5	1.5
Q1302		
B	0.7	0.7
C	0	0
E	0	0
Q1303		
B	2.0	1.9
C	-	-
E	2.7	2.5
Q1304		
B	2.4	2.4
C	-	-
E	3.1	3.1
Q1306		
B	-	-
C	-	-
E	4.3	4.3
Q1307		
B	4.1	4.1
C	5.0	5.0
E	3.3	3.3
Q1308		
B	4.7	4.7
C	6.9	6.9
E	4.1	4.1
Q1310		
B	4.9	4.9
C	6.7	6.7
E	4.2	4.2
Q1311		
B	2.5	2.5
C	-	-
E	3.2	3.2
Q1312		
B	6.4	6.4
C	-	-
E	5.8	5.8
Q1313		
B	2.9	2.9
C	6.4	6.4
E	2.2	2.2
Q1314		
B	-	-
C	-	-
E	2.7	2.7
Q1315		
B	3.1	3.1
C	-	-
E	2.5	2.5
Q1316		
B	1.6	1.6
C	-	-
E	2.2	2.2
Q1318		
B	4.9	4.9
C	7.6	7.6
E	4.2	4.2
Q1319		
B	7.5	7.5
C	-	-
E	6.8	6.8
Q1320		
B	8.1	8.1
C	-	-
E	7.5	7.5
Q1321		
B	1.7	1.7
C	-	-
E	2.3	2.3

9-13. LINEAR AUDIO CIRCUIT VOLTAGE CHART

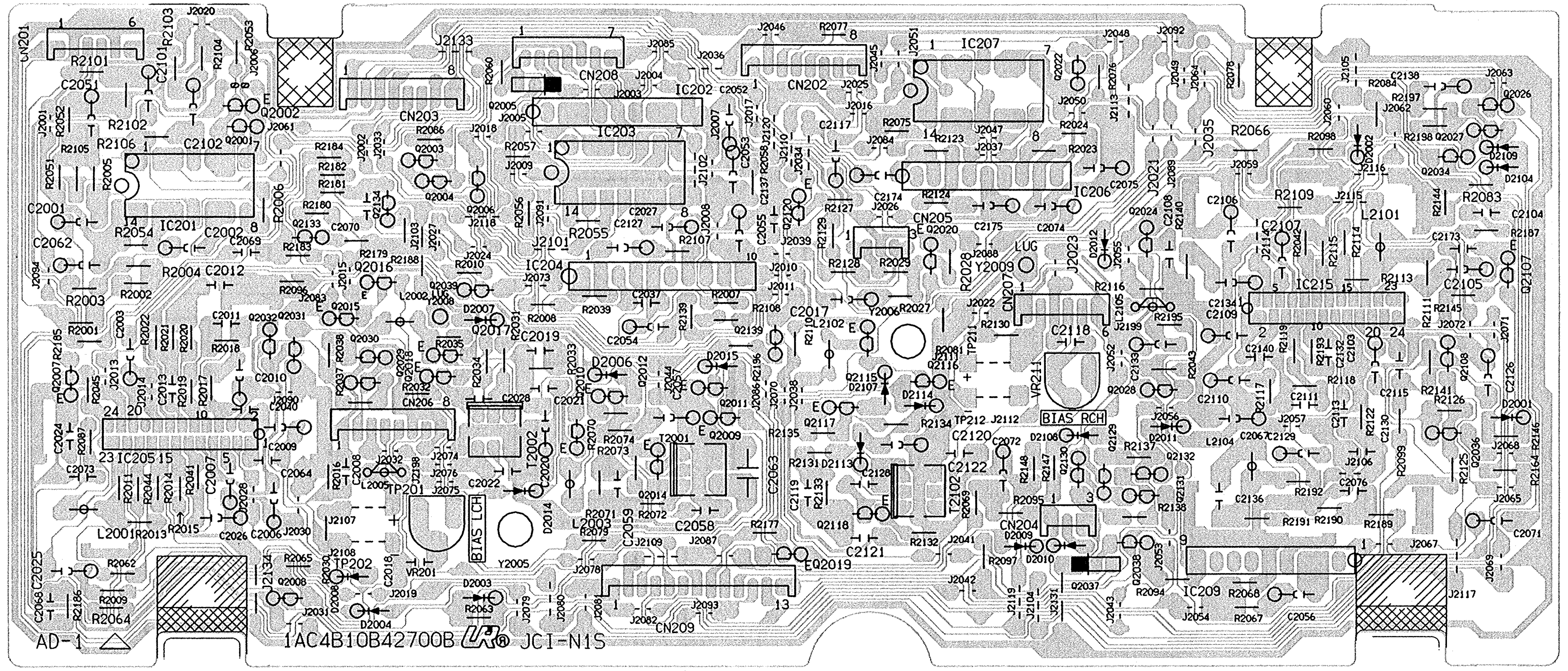
PIN	REC	PLAY
IC202		
2	6.0	6.0
4	6.0	6.0
6	6.0	6.0
8	6.0	6.0
IC204		
2	5.7	5.7
3	6.2	6.2
4	6.0	6.0
7	6.0	6.0
8	6.2	6.2
9	5.8	5.8
IC205		
1	0	0
2	5.0	5.0
3	0	0
5	12.0	12.0
6	5.0	5.0
8	5.1	5.1
9	6.3	0.1
10	5.1	5.1
11	0	6.5
12	5.6	5.6
13	2.3	2.3
15	5.7	5.7
16	5.6	5.6
17	1.2	1.2
19	5.7	5.7
21	5.7	5.7
22	5.7	5.7
24	5.8	0.1
IC215		
1	0	0
2	5.0	5.0
3	0	0
5	12.0	12.0
6	5.0	5.0
8	5.1	5.1
9	5.8	0.1
10	5.1	5.1
11	0.5	5.6
12	5.6	5.6
13	2.3	2.3
15	5.7	5.7
16	5.6	5.6
17	1.2	1.2
18	5.7	5.7
19	5.7	5.7
21	5.7	5.7
22	5.7	5.7
24	6.3	0.1
IC206		
2	5.7	5.7
3	5.7	5.7
4	5.7	5.7
6	5.7	5.7
7	5.7	5.7
8	5.7	5.7
IC209		
2	5.7	5.7
3	5.7	5.7
4	5.7	5.7

PIN	REC	PLAY
Q2014		
B	-0.2	0.1
C	10.3	0.1
E	0.3	0
Q2018		
B	0.7	0.1
C	10.6	0.1
E	0.3	0
Q2029		
B	0.7	0
C	0	0
E	-	-
Q2030		
B	0.7	0
C	-	-
E	-	-
Q2039		
B	-	-
C	12.1	12.1
E	5.1	5.1
Q2118		
B	0.9	0.2
C	10.8	0.2
E	0.2	0
Q2129		
B	0.7	-0.3
C	0	0
E	-	-
Q2130		
B	0.7	-0.3
C	-	-
E	-	-
Q2133		
B	2.4	2.4
C	7.8	7.8
E	1.8	1.8
Q2134		
B	7.6	7.6
C	-	-
E	6.9	6.9
Q2139		
B	-	-
C	12.1	12.1
E	5.2	5.2

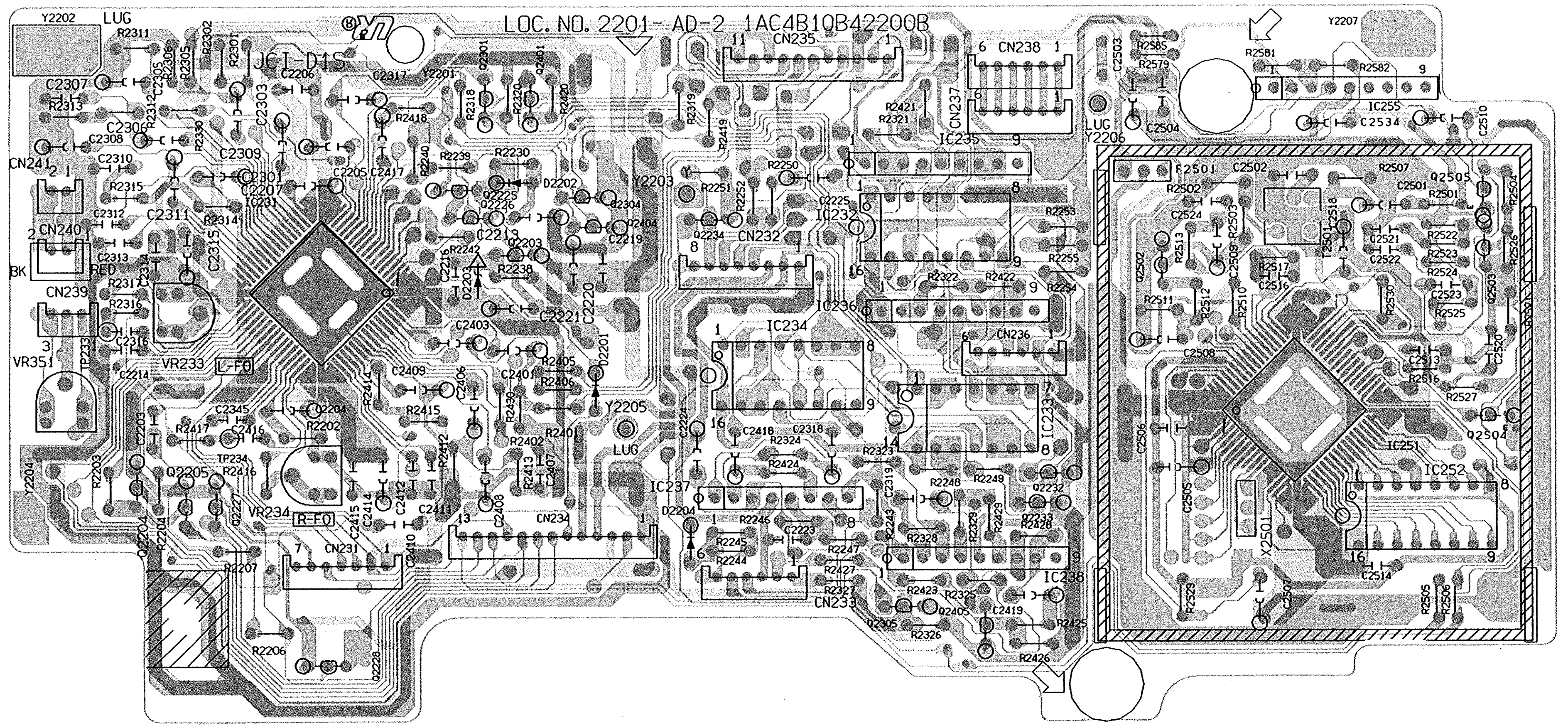
9-14. AD-1 BOARD LINEAR AUDIO


AD-1
A1-13907/HP4QS-G2
CN208
MIC SIG L
GND
MIC SIG R
SWD 12V
MIC SW L
MIC SW R
NOR A-MUTE
TO TM-2 CN726
INPUT SELECT IC201
TC40668P
IC202
LA6458S
IC203
MIC SELECT
IC204
REC VR
CN209
NOR A-MUTE
INSEART (H)
L REC (H)
R REC (H)
REC MUTE L
REC MUTE R
BIAS CONT L
BIAS CONT R
S TAPE (H)
SPECIAL PLAY
AD IN1/IN2
TC IN
TC OUT
TO SV-1 CN307
LINIER AUDIO PROCESS IC205
BA7795LS
LCH
LINIER AUDIO PROCESS IC215
RCH
METER SW IC207
LA6458S IC206
AUDIO AMP
LA6458S BUF. IC209
TO TB-1 CN851
CN201
LIN L IN1
GND
LIN R IN1
LIN L IN2
GND
LIN R IN2
CN202(R)
SWD 12V
GND
ALWAYS 5V
HF L METER
HF R METER
LIN L MON
LIN R MON
MON MUTE
TO AD-2 CN232
CN203(Y)
M-CONT
METER LCH
GND
METER RCH
NC
REC VR L
REC VR R
LTC ON/OFF
TO TM-2 CN722
CN204
REC12V
PB 5V
GND
TO VD-1 CN108
CN205
LIN L OUT
GND
LIN R OUT
TO TB-1 CN851
TO MC-5
CN206
GND
AE LCH -
AE LCH +
R/P LCH REC
R/P LCH PB
GND
FE
GND
CN207(R)
GND
R/P RCH PB
R/P RCH REC
AE RCH +
AE RCH -
GND
TO MC-5

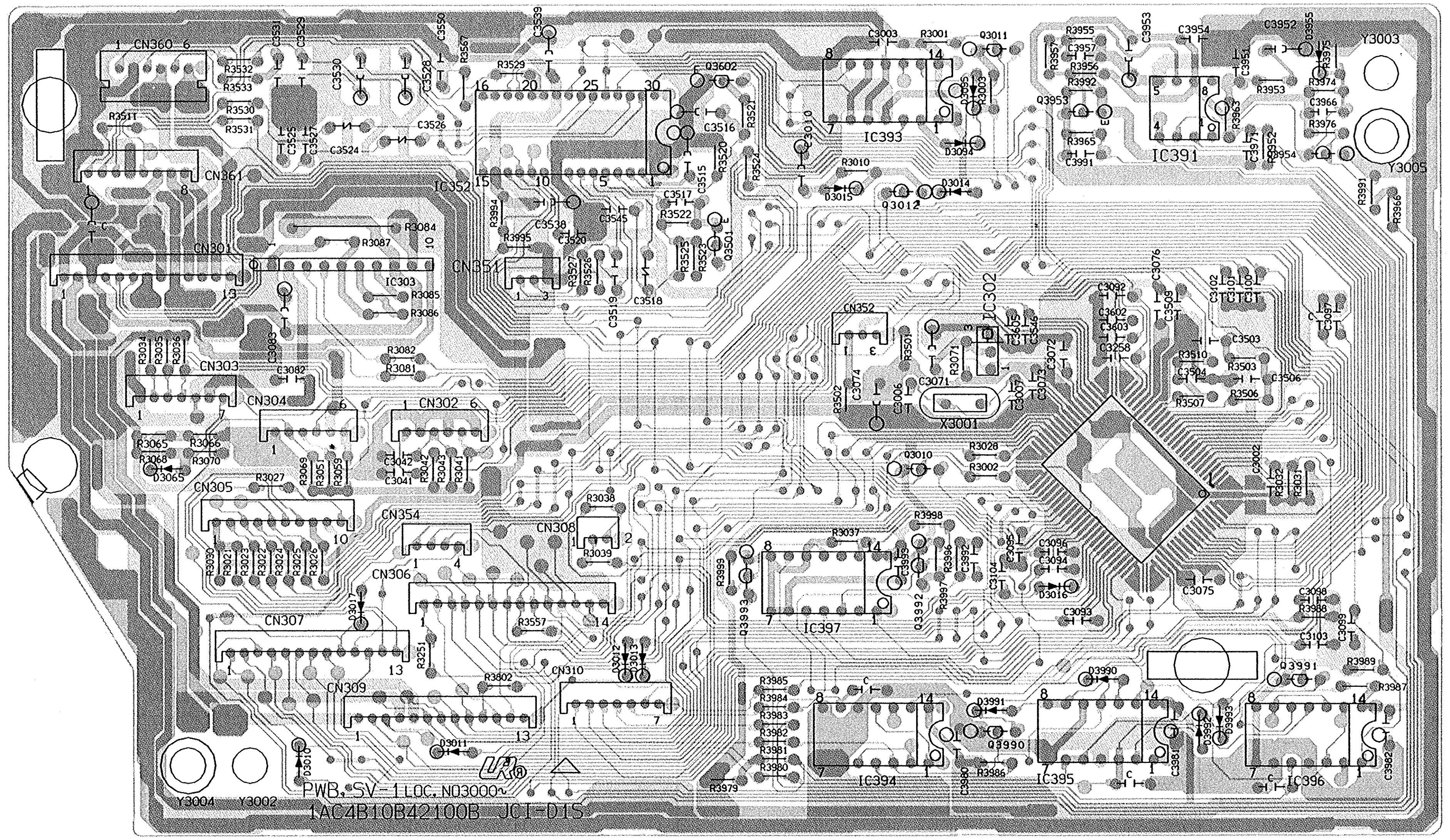
9-15. AD-1 P.W.B.


AD-1
1AC4B10B42700B JCI-N1S
BIAS RCH
BIAS LCH
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC209
IC215
CN202
CN203
CN208
CN209

9-16. AD-2 P.W.B.


LOC. NO. 2201- AD-2 1AC4B10B42200B
JCI-D1S
LUG
IC233
IC234
IC235
IC237
IC238
IC251
IC252
IC255
CN231
CN232
CN233
CN234
CN235
CN236
CN237
CN238
CN239
CN240
CN241
VR233
VR234
VR351
L-F0
R-F0

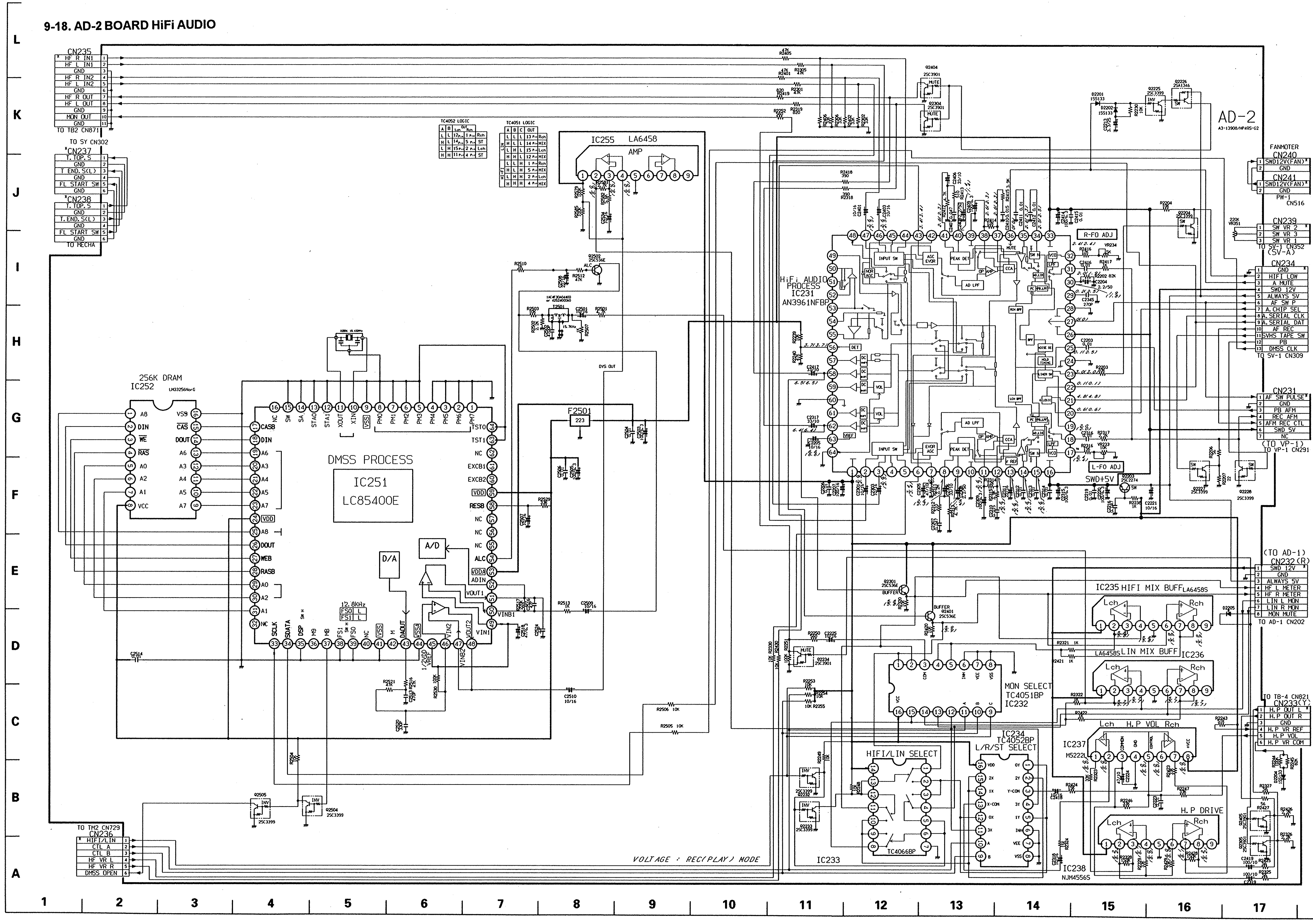
9-17. SV-1 P.W.B.


PWB. SV-1 LOC. NO3000
1AC4B10B42100B JCI-D1S
IC302
IC303
IC351
IC391
IC393
IC394
IC395
IC396
IC397
CN301
CN302
CN303
CN304
CN305
CN306
CN307
CN308
CN309
CN310
CN351
CN352
CN354
CN360
CN361
X3001
Y3003
Y3004
Y3002
Y3005

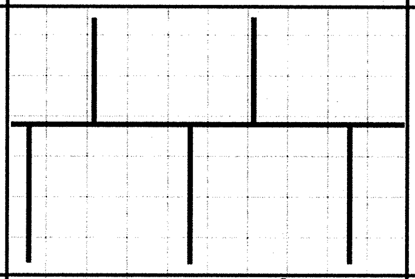
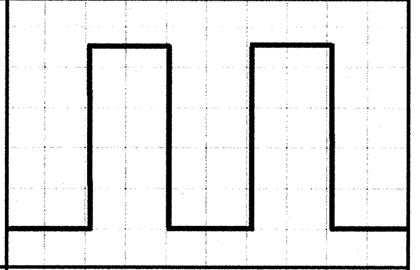
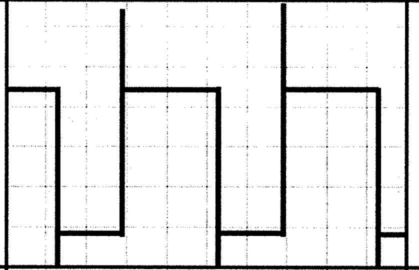
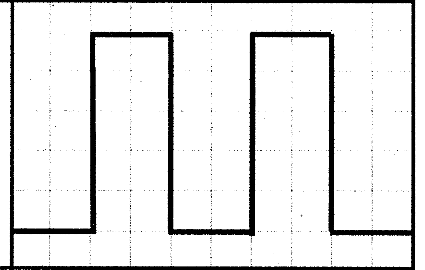
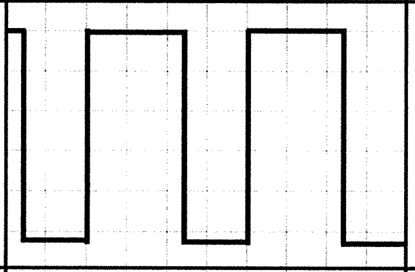
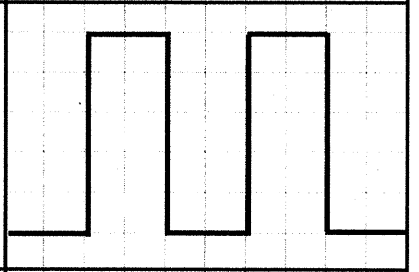
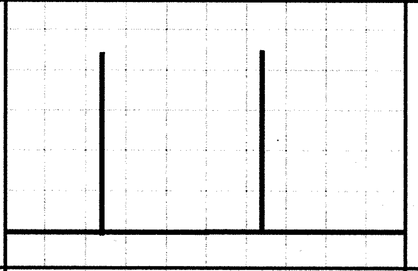
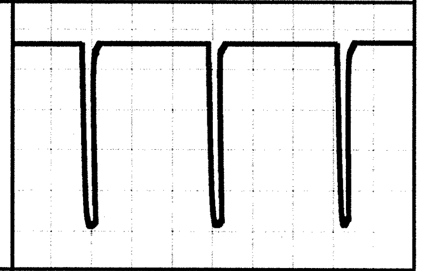
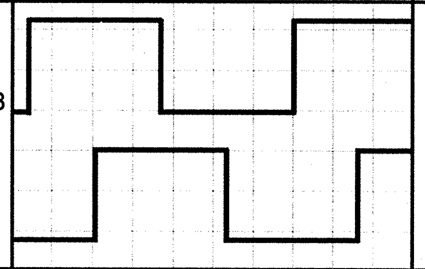
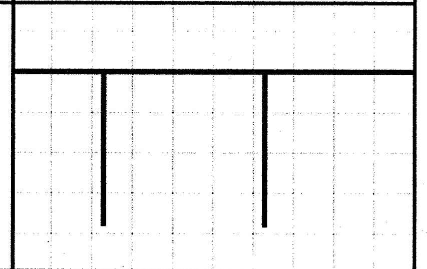
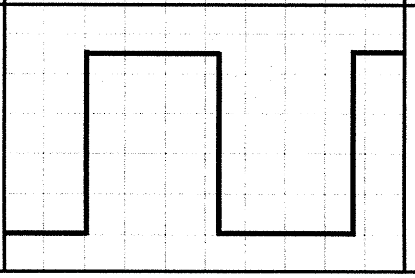
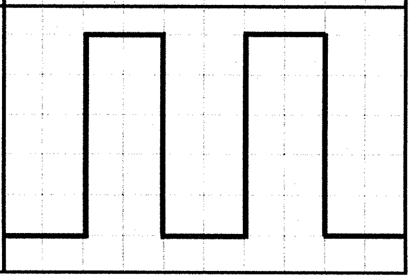
L
K
J
I
H
G
F
E
D
C
B
A

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

9-18. AD-2 BOARD HiFi AUDIO

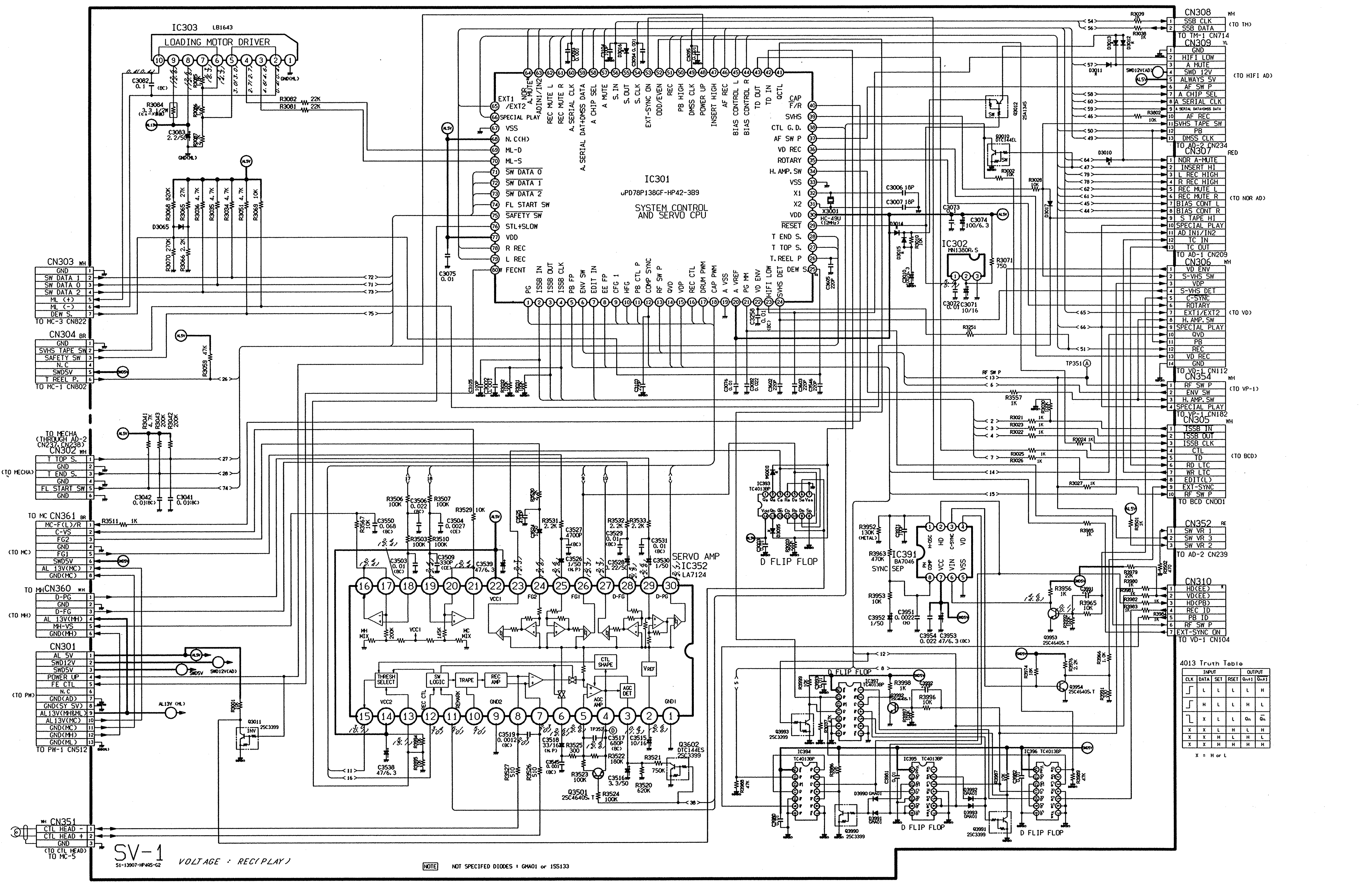

CN235
HF R IN1
HF L IN1
GND
HF R IN2
HF L IN2
GND
HF R OUT
HF L OUT
GND
MON OUT
GND
TO TB2 CN871
TO SY CN302
CN237
T. TOP. S
T. END. S(L)
FL START SW
CN238
TO MECHA
256K DRAM
IC252
DMSS PROCESS
IC251
LC85400E
IC255 LA6458
AMP
F2501
D/A
A/D
HiFi AUDIO PROCESS
IC231
AN3961NFBP
R-FO ADJ
L-FO ADJ
SWD+5V
AD-2
FANMOTER
CN240
CN241
CN239
TO SV-1 CN352 (SV-A)
CN234
TO SV-1 CN309
CN231
TO VP-1 CN291
TO AD-1
CN232
TO AD-1 CN202
IC235 HIFI MIX BUFF LA6458S
LA6458S LIN MIX BUFF IC236
MON SELECT
TC4051BP
IC232
IC234
TC4052BP
L/R/ST SELECT
HIFI/LIN SELECT
TC4066BP
IC233
IC237
M5222L
H.P VOL
H.P DRIVE
IC238
NJM4556S
TO TB-4 CN921
CN233
TO TM2 CN729
CN236
HIFI I/LIN
CTL A
CTL B
HF VR L
HF VR R
DMSS OPEN
VOLTAGE : REC(PLAY) MODE
TC4052 LOGIC
TC4051 LOGIC

9-19. SERVO CIRCUIT WAVEFORMS

TEST LOCATION	WAVEFORM	TEST LOCATION	WAVEFORM
IC352 PIN 4 PLAY 0.2V/div. 10ms/div.		IC352 PIN 30 REC 1.0V/div. 10ms/div.	
IC352 PIN 7 REC 1.0V/div. 10ms/div.		IC301 PIN 8 REC 1.0V/div. 20ms/div.	
IC352 PIN 12 REC 1.0V/div. 10ms/div.		IC301 PIN 5 PLAY 1.0V/div. 20ms/div.	
IC352 PIN 15 PLAY 1.0V/div. 10ms/div.		CN310 PIN 1 REC 1.0V/div 20 μ s/div.	
IC352 UP:PIN 19 LOW:PIN 23 REC 2.0V/div. 0.1ms/div.		CN310 PIN 2 REC 1.0V/div. 5ms/div.	
IC352 PIN 27 REC 1.0V/div. 0.2ms/div.		IC301 PIN 13 REC/PLAY (RF SWP) 1.0V/div. 10ms/div.	

WF-S-HP4Q

9-20. SV-1 BOARD SYSTEM CONTROL AND SERVO

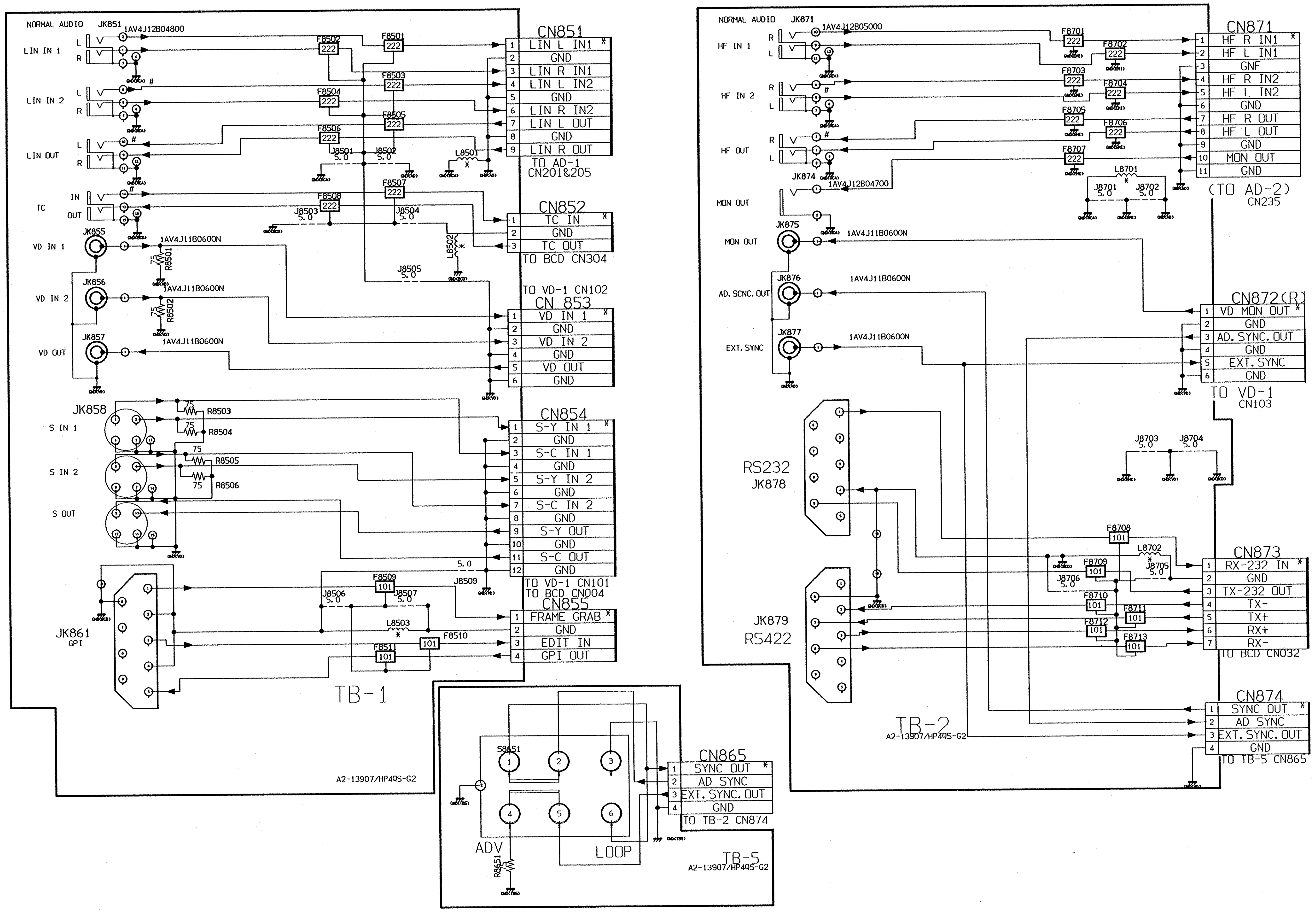

IC303 LB1643
LOADING MOTOR DRIVER
IC301
μPD78P138GF-HP42-3B9
SYSTEM CONTROL AND SERVO CPU
IC302 MN1380R.5
IC391 BA7046 SYNC SEP
SERVO AMP IC352 LA7124
D FLIP FLOP
IC393 TC4013BP
IC394 TC4013BP
IC395 TC4013BP
IC396 TC4013BP
CN303
CN304
CN302
CN361
CN360
CN301
CN351
CN308
CN309
CN307
CN306
CN354
CN305
CN352
CN310
TO MC-3 CN822
TO MC-1 CN802
TO MECHA
TO MC
TO MH
TO PW
TO PW-1 CN512
TO CTL HEAD TO MC-5
(TO TM)
(TO HIFI AD)
(TO NOR AD)
(TO VD)
(TO VP-1)
(TO BCD)
TO BCD CN001
TO AD-2 CN239
TO VD-1 CN104
X3001 HC-49U (12MHz)
4013 Truth Table
SV-1
VOLTAGE : REC(PLAY)
NOTE NOT SPECIFED DIODES : GMA01 or 1SS133

9-21. IC301 SYSTEM CONTROL, TUNING CONTROL & SERVO MPU PIN FUNCTIONS TABLE

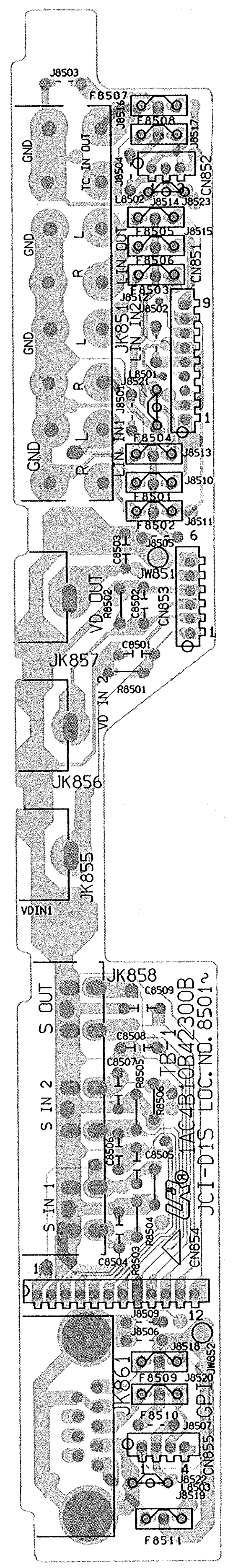
No.	Name	I/O	I/O Signal Function
1	D-PG	I	Drum PG pulse input.
2	ISSB IN	I	Terminal for communication of mode data with the animation production controller (BCD).
3	ISSB OUT	O	Data is 8 bit × 12 block serial data.
4	ISSB CLCK	O	The clock pulse is output from this microprocessor.
5	PB FP	I	Flame pulse input for playback mode.
6	ENV SW	I	Video head selection signal (PB envelop detection signal) input for 4-head special playback.
7	EDIT IN	I	Insert mode indication signal input from the animation production controller (BCD).
8	EE FP	I	Flame pulse input for E.E. mode.
9	C-FG 1.	I	Capstan motor FG-1 signal input. (Capstan speed control)
10	D-FG	I	Head drum motor FG signal input. (Drum speed control)
11	PB CTL P.	I	CTL head playback pulse input.
12	COMP SYNC	I	Composite sync signal input.
13	RF SW P.	O	Output of RF switching pulse created by head drum PG.
14	Q VD	O	V-sync timing pulse and quasi V-sync pulse output to quasi VD (V LOCK) pulse generation circuit.
15	VD P	O	
16	REC CTL	O	Recording control (CTL) signal output.
17	DRUM PWM	O	Video head drum motor rotation (speed/phase) servo control signal output. (Signal as Pulse Width Moduration)
18	CAP PWM	O	Capstan motor rotation (speed/phase) servo control signal output. (Signal as Pulse Width Moduration)
19	A-VSS	-	Ground terminal for internal A/D converter.
20	A-V REF	I	Reference voltage input for internal A/D converter.
21	PG MM	I	Video head switching position adjustment terminal. Adjustment to the time constant of DRUM-PG MM.
22	VD ENV	I	Video head envelope detection signal input for ATR function.
23	HIFI LOW	I	Hi-Fi audio playback mode indication signal input from audio circuit.
24	SVHS DET	I	S-VHS video circuit processing mode detection signal input.
25	DEW S.	I	Dew sensor input terminal.
26	T. REEL P.	I	Pulse input for detection of take-up reel table rotation.
27	T. TOP S.	I	Sensor signal input for tape beginning detection.
28	T. END S.	I	Sensor signal input for tape end detection.
29	RESET	I	Initial reset terminal for this IC.
30	VDD	-	IC power supply input. (5Vdc)
31	X2	-	IC clock OSC terminal.
32	X1	-	Frequency is 12 MHz.
33	VSS	-	Ground terminal
34	H AMP SW	O	Video head amplifier (SP/LP head or SUB head) selection signal output. (4/3 HEAD models)
35	ROTARY	O	Chroma phase control signal output for 4/3 head models.
36	VD REC	O	Recording indication signal. Used for equiped rotary erase head models.
37	AF SW P.	O	Output of Hi-Fi (AF) audio head switching pulse created by head drum PG.
38	CTL GAIN DOWN	O	CTL head AMP gain control signal output.
39	S VHS	I	S-VHS tape detection switch input.
40	CAP F/R	O	Capstan motor forward/revers control.
41	Q CTL	O	Quasi CTL pulse output to the animation production controller (BCD) for time code counter.
42	TD IN I	O	Capstan motor rotation direction (FWD/REV) indication signal input.
43	TD OUT	O	Capstan motor rotation direction (FWD/REV) indication signal output.
44	BIAS CONTROL R	O	Normal track audio R-ch bias oscillator activation control.
45	BIAS CONTROL L	O	Normal track audio L-ch bias oscillator activation control.
46	AF REC	O	Signal for indicating Hi-Fi audio (AF) recording timing.
47	INSERT HIGH	O	Insert mode indication.
48	POWER UP	O	"HIGH" output except when power is off. Indicating that power is ON.
49	DMSS CLK	O	DMSS process IC control clock.
50	PB H	O	Signal indicating playback mode.
51	REC	O	Signal indicating recording mode.
52	ODD/EVEN	I	ODD/EVEN field discrimination signal input.
53	EXT-SYNC ON	I	The indication signal that EXT-SYNC signal is input.
54	SSB CLCK	O	The clock pulse is output from this microprocessor.
55	S-DATA OUT	O	Data is 8 bit × 12 block serial data.
56	S-DATA IN	I	Terminal for communication of mode data with other microprocessors.
57	A MUTE	O	Signal disable Hi-Fi audio signal output.
58	A. CHIP SEL	O	Hi-Fi audio process IC chip enable signal output.
59	A SERIAL + DMSS DATA	O	Hi-Fi audio process IC and DMSS IC control data output.
60	A. SERIAL CLK	O	Hi-Fi audio process IC mode control clock.
61	REC MUTE R	O	Disable to normal track audio R-ch recording.
62	REC MUTE L	O	Disable to normal track audio L-ch recording.
63	AD IN1/IN2	O	Signal for selecting audio input source.
64	NOR A. MUTE	O	Disable to normal track audio signal.
65	EXT1/EXT2	O	Signal for selecting video input source.
66	SPECIAL PLAY	O	Signal to indicate CUE, REV, STILL and SLOW modes.
67	VSS	-	IC ground terminal.
68	–	I	Normaly pull-up 5Vdc.
69	ML-D	O	Loading motor rotation direction (FWD/REV) indication signal.
70	ML-S	O	Loading motor rotation speed (low/med/high) indication signal.
71	SW DATA 0	I	3-bit data indicating operation position of mechanism.
72	SW DATA 1	I	
73	SW DATA 2	I	
74	FL-START SW	I	Switch input indicating start of cassette loading or discharge by cassette mechanism.
75	SAFETY SW	I	Input terminal for accidental erasure prevention switch. No operation to record mode while "HIGH" is input.
76	STILL + SLOW	O	Signal for indicating STILL and SLOW modes.
77	VDD	-	IC power supply terminal (5Vdc)
78	R REC	O	Normal track audio R-ch recording activation control.
79	L REC	O	Normal track audio L-ch recording activation control.
80	FE CNT	O	Rotary erase head activation control.

HP4QS_SS

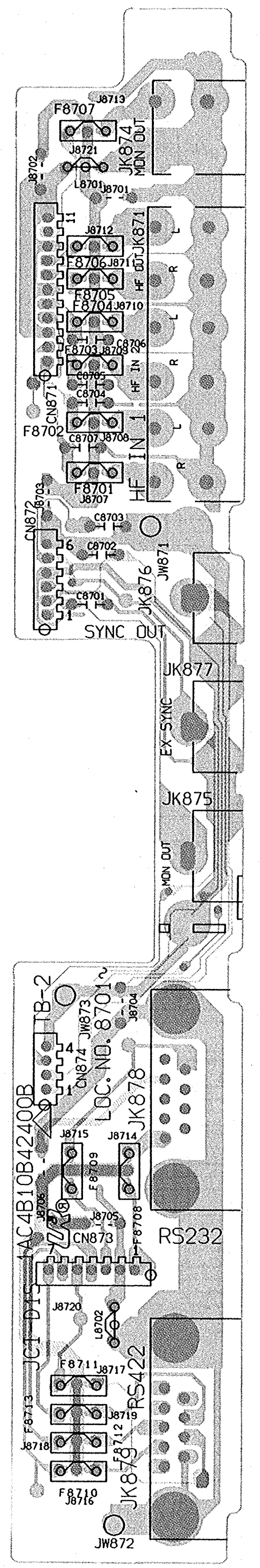
9-22. TB-1,2,5 BOARD TERMINAL


NORMAL AUDIO
JK851
1AV4J12B04800
LIN IN 1
LIN IN 2
LIN OUT
TC
IN
OUT
VD IN 1
JK855
1AV4J11B0600N
VD IN 2
JK856
VD OUT
JK857
JK858
S IN 1
S IN 2
S OUT
R8503
R8504
R8505
R8506
JK861
GPI
CN851
1 LIN L IN1
2 GND
3 LIN R IN1
4 LIN L IN2
5 GND
6 LIN R IN2
7 LIN L OUT
8 GND
9 LIN R OUT
TO AD-1 CN201&205
CN852
1 TC IN
2 GND
3 TC OUT
TO BCD CN304
TO VD-1 CN102
CN 853
1 VD IN 1
2 GND
3 VD IN 2
4 GND
5 VD OUT
6 GND
CN854
1 S-Y IN 1
2 GND
3 S-C IN 1
4 GND
5 S-Y IN 2
6 GND
7 S-C IN 2
8 GND
9 S-Y OUT
10 GND
11 S-C OUT
12 GND
TO VD-1 CN101
TO BCD CN004
CN855
1 FRAME GRAB
2 GND
3 EDIT IN
4 GPI OUT
TB-1
A2-13907/HP40S-G2
S8651
ADV
LOOP
R8651
CN865
1 SYNC OUT
2 AD SYNC
3 EXT. SYNC. OUT
4 GND
TO TB-2 CN874
TB-5
A2-13907/HP40S-G2
NORMAL AUDIO
JK871
1AV4J12B05000
HF IN 1
HF IN 2
HF OUT
JK874
1AV4J12B04700
MON OUT
JK875
JK876
AD. SCNC. OUT
JK877
EXT. SYNC
RS232
JK878
JK879
RS422
CN871
1 HF R IN1
2 HF L IN1
3 GNF
4 HF R IN2
5 HF L IN2
6 GND
7 HF R OUT
8 HF L OUT
9 GND
10 MON OUT
11 GND
(TO AD-2)
CN235
CN872(R)
1 VD MON OUT
2 GND
3 AD. SYNC. OUT
4 GND
5 EXT. SYNC
6 GND
TO VD-1
CN103
CN873
1 RX-232 IN
2 GND
3 TX-232 OUT
4 TX-
5 TX+
6 RX+
7 RX-
TO BCD CN032
CN874
1 SYNC OUT
2 AD SYNC
3 EXT. SYNC. OUT
4 GND
TO TB-5 CN865
TB-2
A2-13907/HP40S-G2

9-23. TB-1 P.W.B.


JK858
JK857
JK856
JK855
JK861
CN855
S OUT
S IN 2
S IN 1
VD IN1
LIN OUT
LIN IN1
LIN IN2
GPI
JCI-D1S
LOC. NO. 8501
AC4B10B42300B

9-24. TB-2 P.W.B.

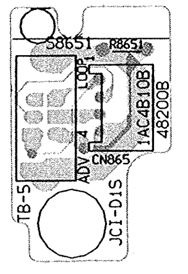

JK874
JK871
JK876
JK877
JK875
JK878
JK879
RS232
RS422
SYNC OUT
EX-SYNC
MON OUT
HF IN
TB-2
JCI-D1S
LOC. NO. 8701
AC4B10B42400B
CN873
CN874

NOTE:

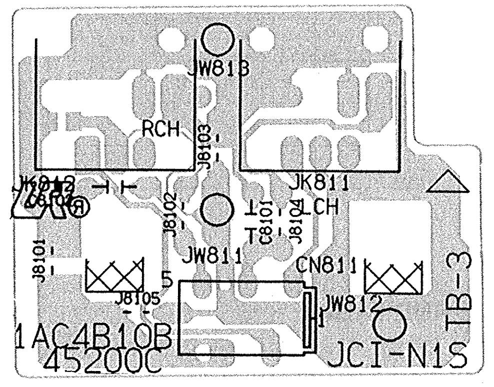
▨ : BOTTOM SIDE FOIL

▨ : TOP SIDE FOIL

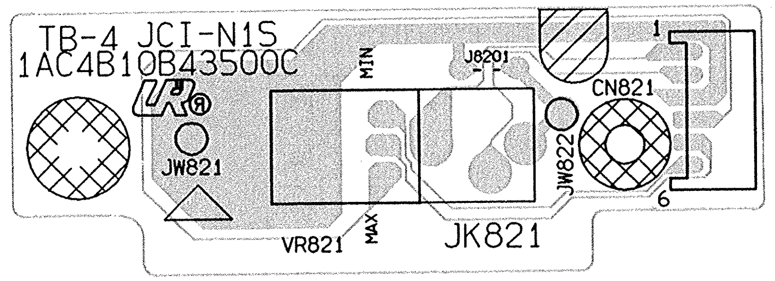
9-25. TB-5 P.W.B.


TB-5
JCI-D1S
S8651
R8651
1AC4B10B
482008
CN865

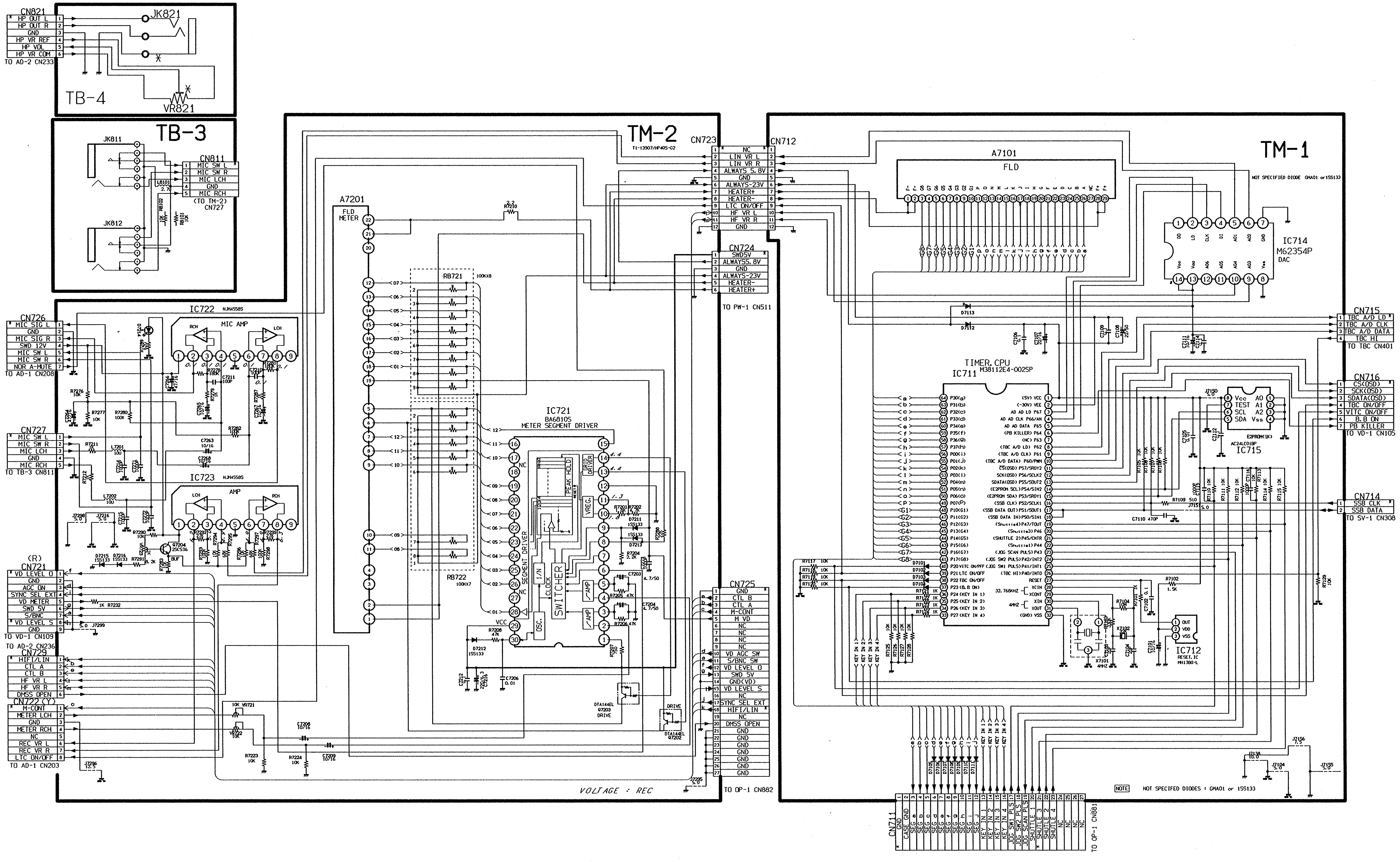
9-26. TB-3 P.W.B.


JW813
RCH
JK811
LCH
JW811
CN811
JW812
1AC4B10B
45200C
JCI-N1S
TB-3

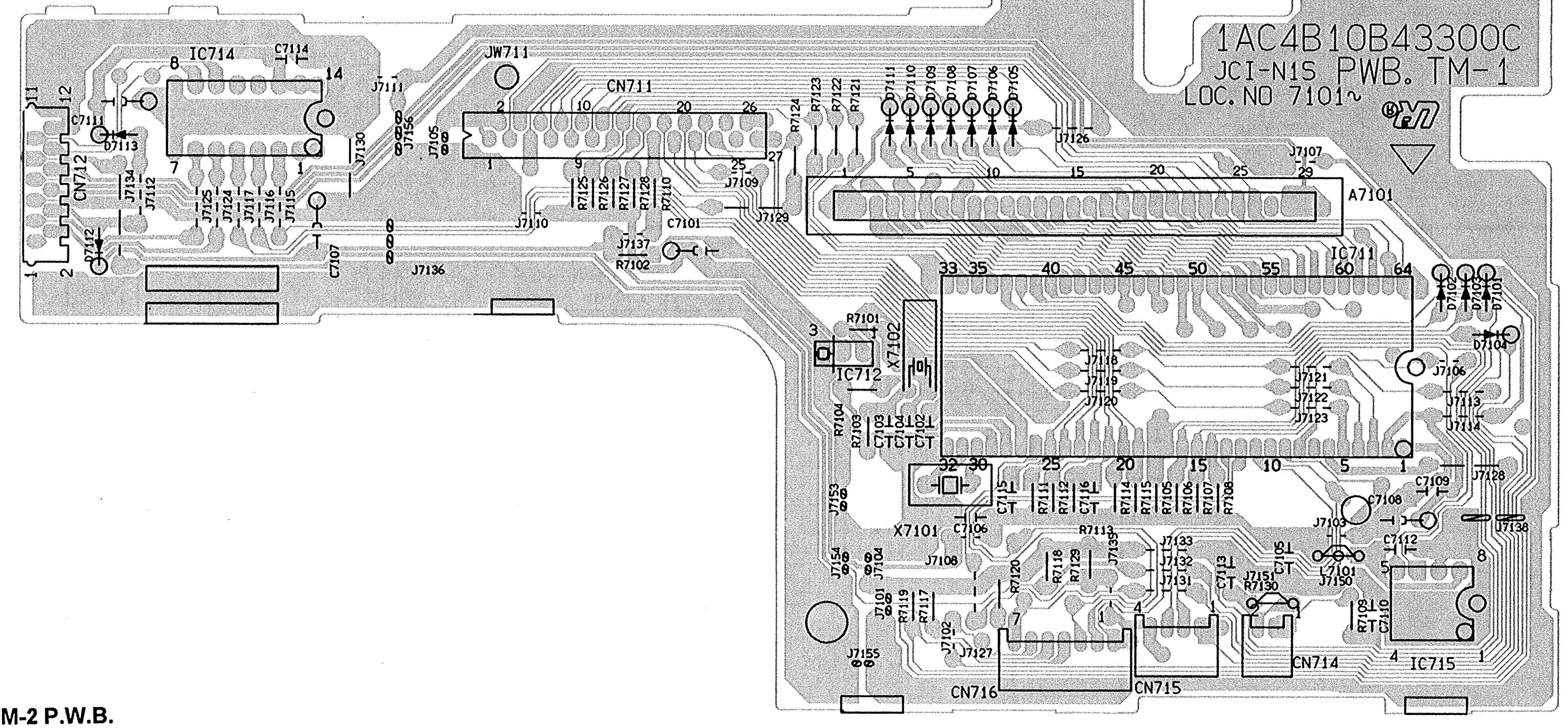
9-27. TB-4 P.W.B.


TB-4
JCI-N1S
1AC4B10B43500C
J8201
MIN
CN821
JW821
JW822
VR821
MAX
JK821

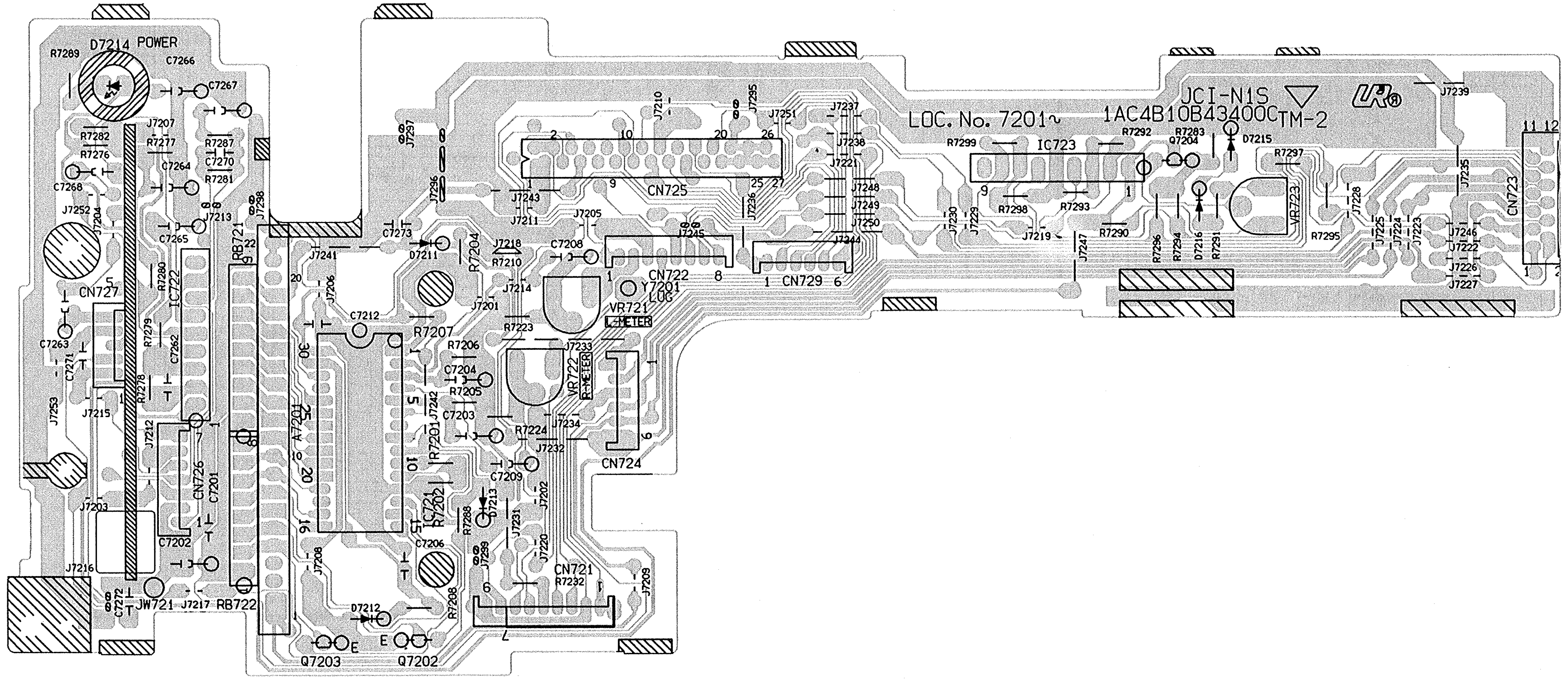
9-28. TM-1,2 BOARD OPERATION AND DISPLAY (FLD)


TB-4
TB-3
TM-2
TM-1
CN821
JK821
VR821
TO AD-2 CN233
JK811
JK812
CN811
(TO TM-2) CN727
CN726
TO AD-1 CN208
CN727
TO TB-3 CN811
CN721
TO VD-1 CN109
TO AD-2 CN236
CN729
CN722 (Y)
TO AD-1 CN203
IC722
MIC AMP
IC723
AMP
A7201
FLD METER
RB721
RB722
IC721
BA6810S
METER SEGMENT DRIVER
CN723
CN712
CN724
TO PW-1 CN511
CN725
TO OP-1 CN882
VOLTAGE : REC
A7101
FLD
IC714
M62354P
DAC
CN715
TO TBC CN401
TIMER, CPU
IC711
M38112E4-002SP
CN716
TO VD-1 CN105
IC715
CN714
TO SV-1 CN308
IC712
RESET, IC
CN711
TO OP-1 CN881
NOT SPECIFIED DIODE GMA01 or 1SS133
NOTE
NOT SPECIFIED DIODES : GMA01 or 1SS133

9-29. TM-1 P.W.B.

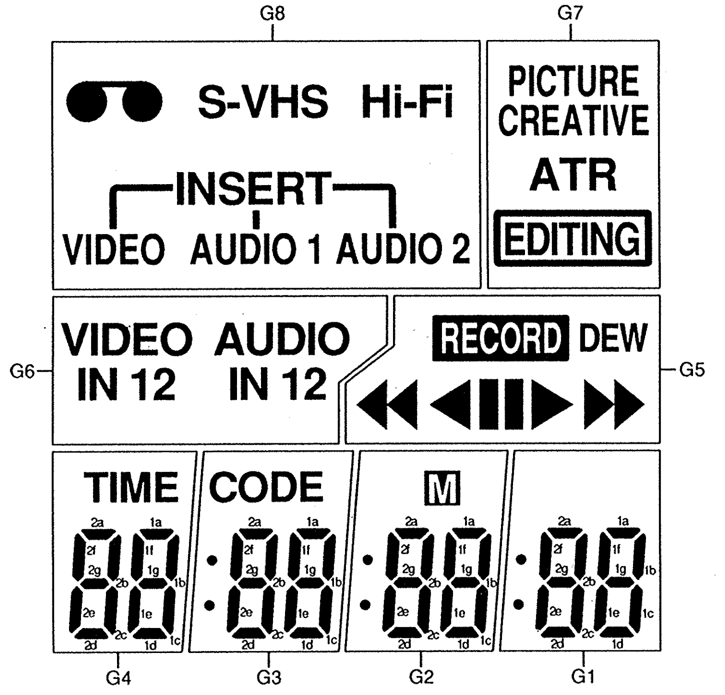

1AC4B10B43300C
JCI-N1S PWB. TM-1
LOC. NO 7101~
IC714
CN711
A7101
IC711
IC712
X7101
X7102
CN716
CN715
CN714
IC715
JW711

9-30. TM-2 P.W.B.


D7214 POWER
LOC. No. 7201~
1AC4B10B43400C
JCI-N1S
TM-2
IC723
CN725
CN723
CN722
CN729
CN727
IC722
A7201
CN726
CN724
CN721
VR721
VR722
VR723
JW721
RB722
RB721
Q7203
Q7202

9-31. A7101 DISPLAY(FLD) GRID/ANODE ASSIGNMENT DRAWING AND TABLE

GRID & SEGMENT ASSIGNMENT


G8
G7
S-VHS
Hi-Fi
PICTURE
CREATIVE
ATR
INSERT
VIDEO
AUDIO 1
AUDIO 2
EDITING
G6
VIDEO
IN 12
AUDIO
IN 12
RECORD
DEW
G5
TIME
CODE
M
G4
G3
G2
G1

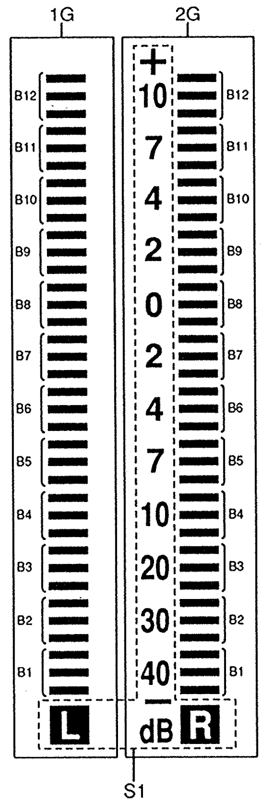
ANODE CONNECTION

SEGMENT \ GRID	G8	G7	G6	G5	G4	G3	G2	G1
a	●●	PICTURE CREATIVE	VIDEO	RECORD	2a	2a	2a	2a
b	S-VHS	ATR	IN (left)	◀◀	2b	2b	2b	2b
c	Hi-Fi	EDITING	1 (left)	◀	2c	2c	2c	2c
d	INSERT	—	2 (left)	▮ (left)	2d	2d	2d	2d
e	VIDEO	—	AUDIO	▮ (right)	2e	2e	2e	2e
f	AUDIO 1	—	IN (right)	▶	2f	2f	2f	2f
g	AUDIO 2	—	1 (right)	▶▶	2g	2g	2g	2g
h	—	—	2 (right)	DEW	TIME	CODE	M	• (upper)
i	—	—	—	—	1a	1a	1a	1a
j	—	—	—	—	1b	1b	1b	1b
k	—	—	—	—	1c	1c	1c	1c
l	—	—	—	—	1d	1d	1d	1d
m	—	—	—	—	1e	1e	1e	1e
n	—	—	—	—	1f	1f	1f	1f
o	—	—	—	—	1g	1g	1g	1g
p	—	—	—	—	—	• •	• •	• (lower)

GR-1B00300

9-32. A7201 DISPLAY(FLD) GRID/ANODE ASSIGNMENT DRAWING AND TABLE

GRID & SEGMENT ASSIGNMENT


1G
2G
B12
B11
B10
B9
B8
B7
B6
B5
B4
B3
B2
B1
+
10
7
4
2
0
2
4
7
10
20
30
40
L
dB
R
S1

ANODE CONNECTION

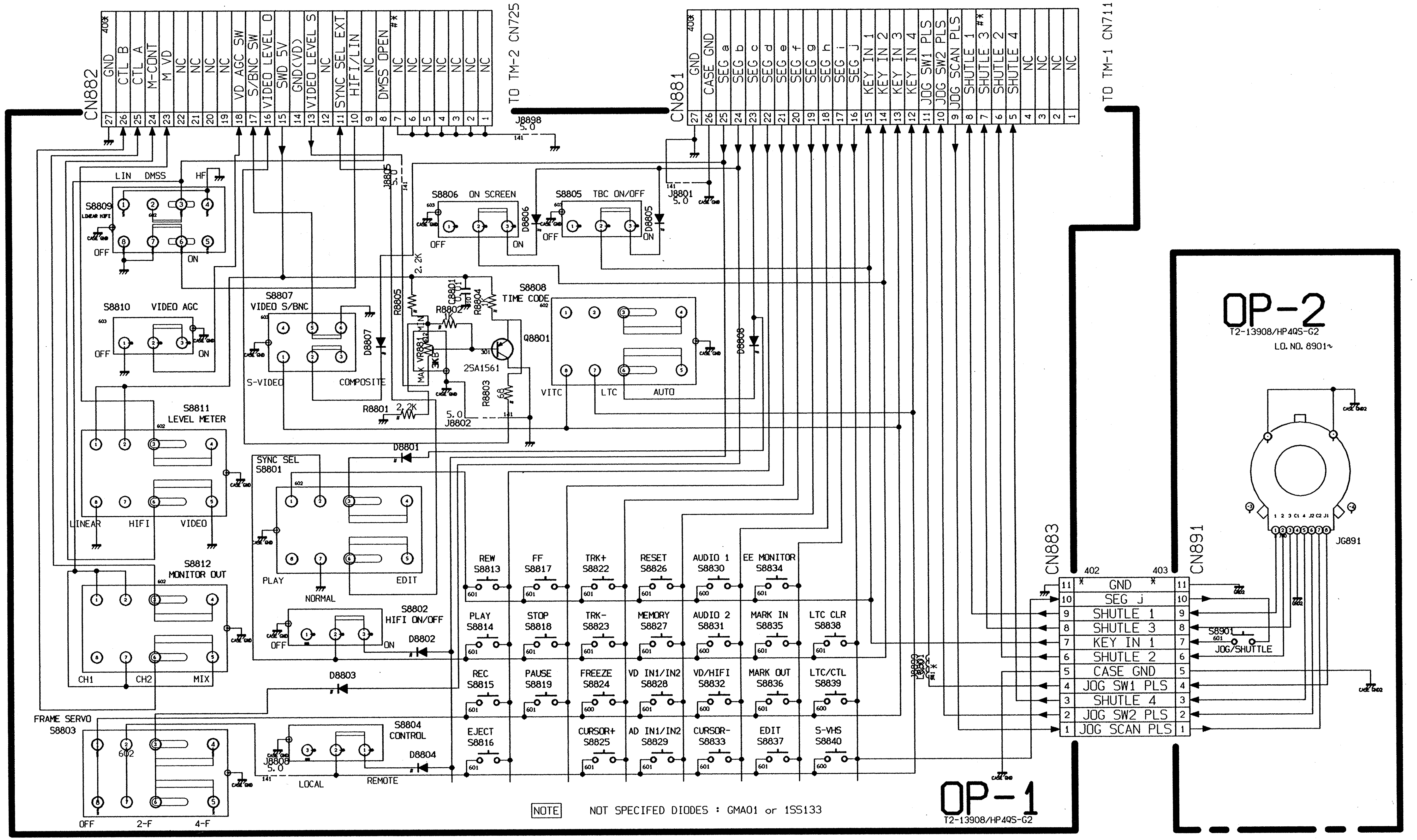
SEGMENT \ GRID	2G	1G
01	B1	B1
02	B2	B2
03	B3	B3
04	B4	B4
05	B5	B5
06	B6	B6
07	B7	B7
08	B8	B8
09	B9	B9
10	B10	B10
11	B11	B11
12	B12	B12

GR-0A01001

L K J I H G F E D C B A

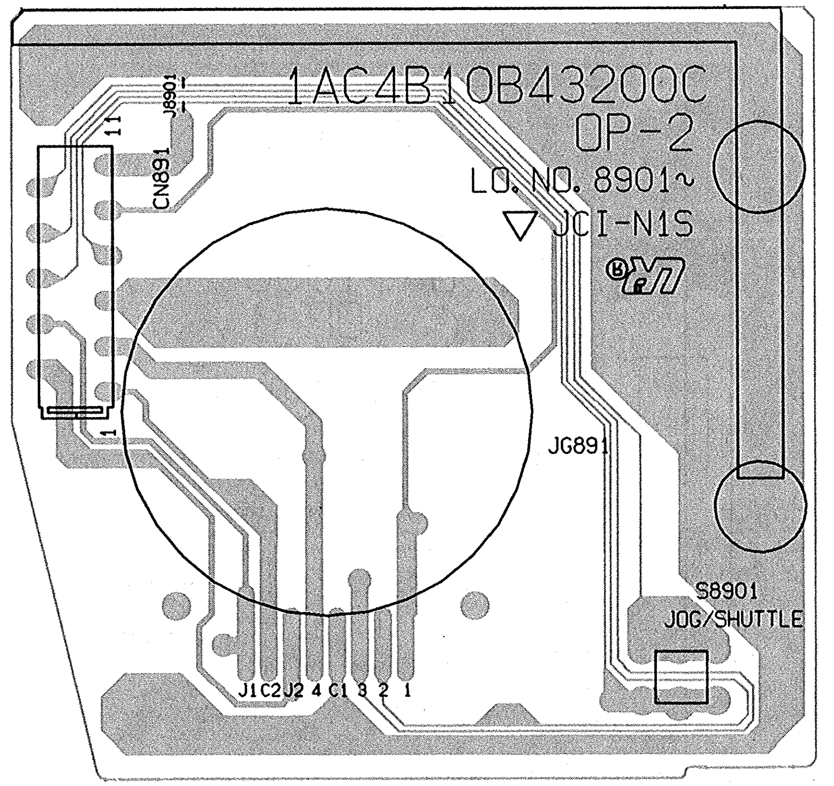
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

9-33. OP-1,2 BOARD OPERATION AND JOG SHUTTLE

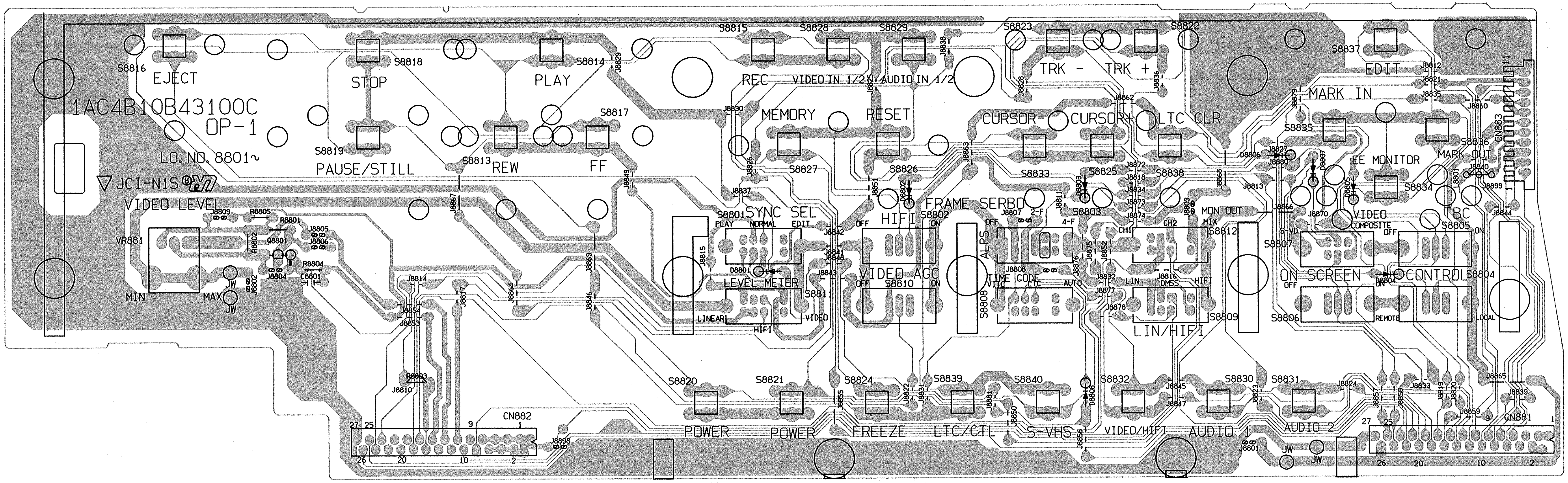

CN882
27 GND
26 CTL B
25 CTL A
24 M-CONT
23 M VD
22 NC
21 NC
20 NC
19 NC
18 VD AGC SW
17 S/BNC SW
16 VIDEO LEVEL 0
15 SWD 5V
14 GND(VD)
13 VIDEO LEVEL S
12 NC
11 SYNC SEL EXT
10 HIFI/LIN
9 NC
8 DMSS OPEN
7 NC
6 NC
5 NC
4 NC
3 NC
2 NC
1 NC
TO TM-2 CN725
CN881
27 GND
26 CASE GND
25 SEG a
24 SEG b
23 SEG c
22 SEG d
21 SEG e
20 SEG f
19 SEG g
18 SEG h
17 SEG i
16 SEG j
15 KEY IN 1
14 KEY IN 2
13 KEY IN 3
12 KEY IN 4
11 JOG SW1 PLS
10 JOG SW2 PLS
9 JOG SCAN PLS
8 SHUTLE 1
7 SHUTLE 3
6 SHUTLE 2
5 SHUTLE 4
4 NC
3 NC
2 NC
1 NC
TO TM-1 CN711
J8898 5.0
J8801 5.0
J8805 5.0
S8809 LINEAR HIFI
LIN DMSS HF
OFF ON
S8806 ON SCREEN
OFF ON D8806
S8805 TBC ON/OFF
OFF ON D8805
S8810 VIDEO AGC
OFF ON
S8807 VIDEO S/BNC
S-VIDEO COMPOSITE
D8807
R8805 2.2K
C8801
R8802
R8804
VR8801 MAX MIN
S8808 TIME CODE
Q8801 2SA1561
R8803 68
R8801 2.2K
J8802 5.0
VITC LTC AUTO
D8808
S8811 LEVEL METER
LINEAR HIFI VIDEO
SYNC SEL S8801
D8801
PLAY NORMAL EDIT
S8812 MONITOR OUT
CH1 CH2 MIX
S8802 HIFI ON/OFF
OFF ON D8802
D8803
FRAME SERVO S8803
OFF 2-F 4-F
S8804 CONTROL
LOCAL REMOTE
J8808 5.0
D8804
REW S8813
FF S8817
TRK+ S8822
RESET S8826
AUDIO 1 S8830
EE MONITOR S8834
PLAY S8814
STOP S8818
TRK- S8823
MEMORY S8827
AUDIO 2 S8831
MARK IN S8835
LTC CLR S8838
REC S8815
PAUSE S8819
FREEZE S8824
VD IN1/IN2 S8828
VD/HIFI S8832
MARK OUT S8836
LTC/CTL S8839
EJECT S8816
CURSOR+ S8825
AD IN1/IN2 S8829
CURSOR- S8833
EDIT S8837
S-VHS S8840
CN883
11 GND
10 SEG j
9 SHUTLE 1
8 SHUTLE 3
7 KEY IN 1
6 SHUTLE 2
5 CASE GND
4 JOG SW1 PLS
3 SHUTLE 4
2 JOG SW2 PLS
1 JOG SCAN PLS
CN891
OP-1
T2-13908/HP4QS-G2
OP-2
T2-13908/HP4QS-G2
LO. NO. 8901~
JG891
S8901 JOG/SHUTTLE
1 2 3 C1 4 J2 C2 J1
L K J I H G F E D C B A
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

NOTE NOT SPECIFED DIODES : GMA01 or 1SS133

9-34. OP-2 P.W.B.


1AC4B10B43200C
OP-2
LO. NO. 8901~
▽ JCI-N1S
CN891
J8901
JG891
S8901 JOG/SHUTTLE
J1 C2 J2 4 C1 3 2 1

9-35. OP-1 P.W.B.



1AC4B10B43100C
OP-1
LO. NO. 8801~
JCI-N1S
VIDEO LEVEL
VR881
MIN
MAX
JW
EJECT
STOP
PLAY
PAUSE/STILL
REW
FF
REC
MEMORY
RESET
VIDEO IN 1/2
AUDIO IN 1/2
TRK -
TRK +
CURSOR-
CURSOR+
LTC CLR
EDIT
MARK IN
MARK OUT
EE MONITOR
TBC
SYNC SEL
PLAY
NORMAL
EDIT
LEVEL METER
LINEAR
HIFI
VIDEO
HIFI
OFF
ON
FRAME SERBO
VIDEO AGC
ALPS
TIME CODE
VITC
LTC
AUTO
2-F
4-F
MON OUT
CH1
CH2
MIX
LIN
DMSS
LIN/HIFI
ON SCREEN
CONTROL
S-VD
COMPOSITE
REMOTE
LOCAL
POWER
FREEZE
LTC/CTL
S-VHS
VIDEO/HIFI
AUDIO 1
AUDIO 2
CN881
CN882
CN883
S8801
S8802
S8803
S8804
S8805
S8806
S8807
S8808
S8809
S8810
S8811
S8812
S8813
S8814
S8815
S8816
S8817
S8818
S8819
S8820
S8821
S8822
S8823
S8824
S8825
S8826
S8827
S8828
S8829
S8830
S8831
S8832
S8833
S8834
S8835
S8836
S8837
S8838
S8839
S8840
D8801
D8802
D8803
D8804
D8805
D8806
D8807
D8808
R8801
R8802
R8803
R8804
R8805
C8801
Q8801
L
K
J
I
H
G
F
E
D
C
B
A
1
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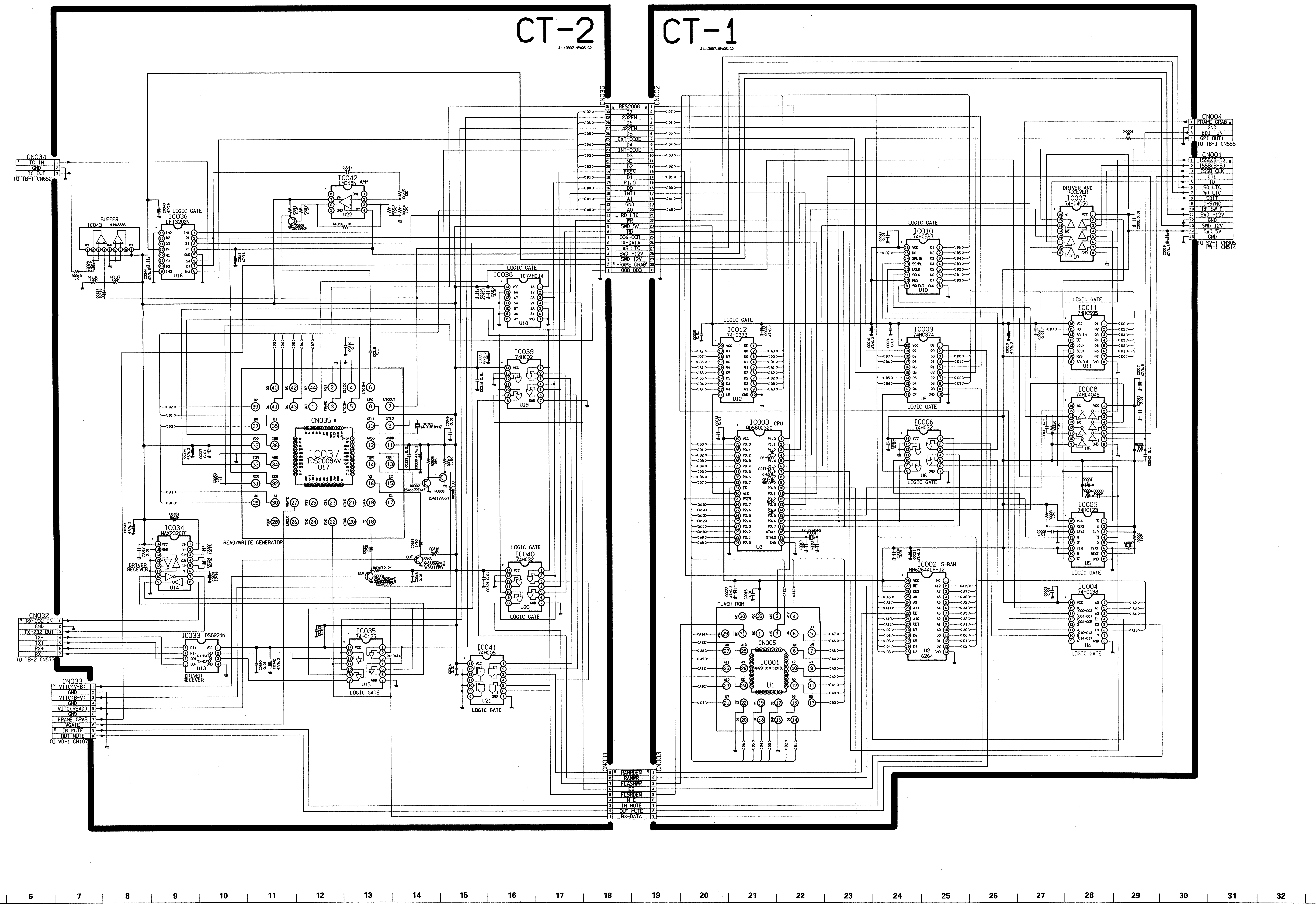
9-36. CT-1,2 BOARD BCD CONTROLLER (GVR-P07) (OPTION BOARD)


CT-2
CT-1
CN030
CN002
CN031
CN003
CN034
TC IN
GND
TC OUT
TO TB-1 CN852
CN032
RX-232 IN
GND
TX-232 OUT
TX-
TX+
RX+
RX-
TO TB-2 CN873
CN033
VITC(V-B)
GND
VITC(B-V)
GND
VITC(READ)
GND
FRAME GRAB
VGATE
IN MUTE
OUT MUTE
TO VD-1 CN107
CN004
FRAME GRAB
GND
EDIT IN
GPI-OUT1
TO TB-1 CN855
CN001
ISSB(B-S)
ISSB(S-B)
ISSB CLK
CTL
TD
RD LTC
WR LTC
EDIT
C-SYNC
RF SW P
SWD -12V
GND
SWD 12V
SWD 5V
GND
TO SV-1 CN305
PN-1 CN514
RES2008
D7
232EN
D6
422EN
D5
EXT-CODE
D4
INT-CODE
D3
NC
D2
PSEN
D1
P1.0
D0
INT1
GND
A1
A0
RD LTC
WR
SWD 5V
RD
006-008
TX-DATA
WR LTC
SWD -12V
SWD 12V
FRAME GRAB
000-003
BUFFER
IC043 NJM4558
LOGIC GATE
IC036 LF13202N
U16
IC042 LM318N AMP
U22
LOGIC GATE
IC038 TC74HC14
U18
IC039 74HC32
U19
CN035
IC037 ICS2008AV
U17
READ/WRITE GENERATOR
IC034 MAX232CPE
DRIVER RECEVER
U14
LOGIC GATE
IC040 74HC32
U20
IC033 DS8921N
U13
DRIVER RECEVER
IC035 74HC125
U15
LOGIC GATE
IC041 74HC08
U21
LOGIC GATE
IC010 74HC597
U10
LOGIC GATE
IC012 74HC373
U12
IC009 74HC374
U9
IC003 CPU
QD580C320
U3
IC006 74HC32
U6
LOGIC GATE
IC002 S-RAM
HM6264ALP-12
U2
6264
FLASH ROM
CN005
IC001
AM29F010-120JC
U1
DRIVER AND RECEVER
IC007 74HC4050
U7
LOGIC GATE
IC011 74HC595
U11
IC008 74HC4049
U8
IC005 74HC123
U5
LOGIC GATE
IC004 74HC138
U4
LOGIC GATE
RAMRDEN
RAMWR
FLASHWR
E2
FLSRDEN
N C
IN MUTE
OUT MUTE
RX-DATA
6
7
8
9
10
11
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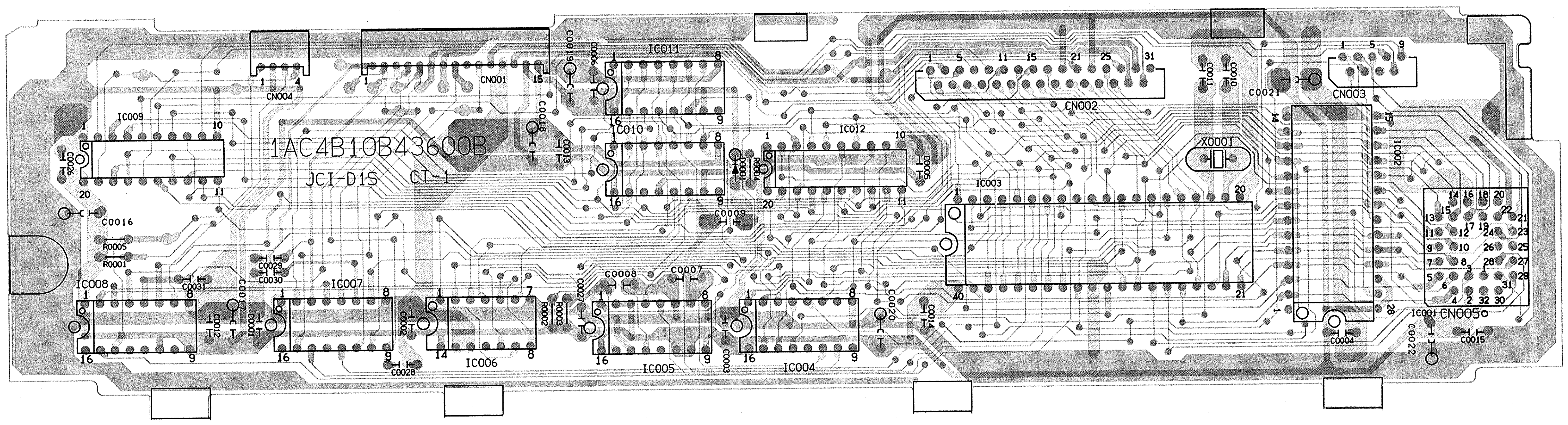
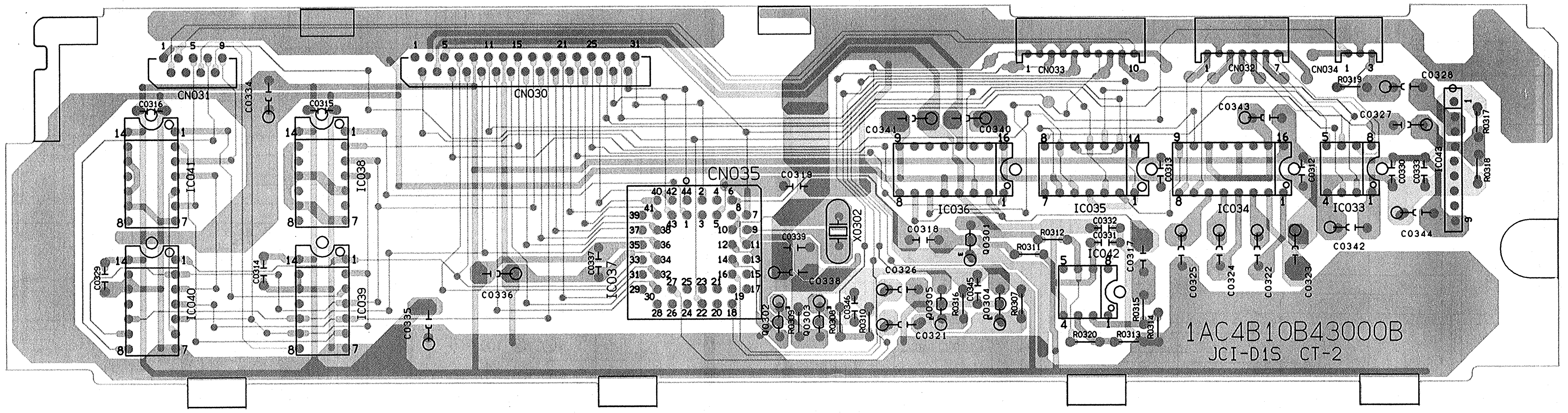
9-37. CT-1 P.W.B. (GVR-P07) (OPTION BOARD)


1AC4B10B43600B
JCI-D1S CT-1
CN001
CN002
CN003
CN004
CN005
IC001
IC002
IC003
IC004
IC005
IC006
IC007
IC008
IC009
IC010
IC011
IC012
X0001
C0016
R0005
R0001

NOTE:
▨ : BOTTOM SIDE FOIL
▨ : TOP SIDE FOIL

9-38. CT-2 P.W.B. (GVR-P07) (OPTION BOARD)


1AC4B10B43000B
JCI-D1S CT-2
CN030
CN031
CN032
CN033
CN034
CN035
IC033
IC034
IC035
IC036
IC038
IC039
IC040
IC041
IC042
IC043
X0302

NOTE:
▨ : BOTTOM SIDE FOIL
▨ : TOP SIDE FOIL

9-39. DM-1 BOARD TBC (GVR-P04) (OPTION BOARD)

TBC
CN403
CN402
CN401
TO PM-1 CN515
TO VD-1 CN101
TO TM-1 CN715
IC453 A/D CONV
IC455 A/D CONV
IC452 A/D CONV
IC454 RAM (SUB MEMORY)
IC451 RAM (SUB MEMORY)
IC456 D/A CONV
IC468 BUFFER BA7655AF
IC460 RAM
IC459 RAM
IC467 RAM
IC466 RAM
IC458 RAM
IC457 RAM
IC465 RAM
IC464 RAM
IC461 GATE ARRAY READ WRITE GENERATOR LC93080AW29
S4001
IC441 TC74AC04F DRIVER
IC442 TC7SU04F INV
IC443 MC1648 PLL OSC
IC444 NJM3404AM FILTER
IC445 TC7W125FU AMP
IC446 TC7S04F INV
IC401 COLOR DECODER M51271FP
IC427
IC421 TA7320P FM MOD
IC422 TA7320P FM MOD
IC423 NJM2904M AMP
IC424 NJM2904M AMP
IC414 TC7S32F LOGIC GATE
IC413 M62352FP DAC
IC412 NJM2904M
IC440 TC74AC04F DRIVER
IC419 INV
IC420 TC7SU04F INV
IC439 TC7SU04F INV
IC430 TC7SU04F INV
IC428 NJM3404AM AMP
IC416 BA7046F SYNC SEP
IC402 NJM2903M AMP
IC403 TC74HC221AF FLIP FLOP
IC405 TC74HC221AF FLIP FLOP
IC429 CXD1217M SYNC GEN
IC425 TC4W53F
IC426 TC4W53F
IC411 NJM2904M
IC410 NJM2255 C GAIN CONT
IC404 M51272FP C ENCODE
IC406 TC7W74F FLIP FLOP
IC409 TC4W53F
IC417 TC7S04F INV
IC431 NJM311M INV
IC432 CXD1217M GEN LOCK
IC434 NJM3404AM AMP
IC418 TC4W53F LOGIC GATE
IC415 TC74HC02AF LOGIC GATE
IC407 BA7655AF GAIN CONT
IC408 TC7S04F INV
IC437 TC7S04F INV
IC436 BA7046F SYNC SEP
IC438 CXD1030M SUB SYNC
SW12V DIG
SW5V DIG
GND DIG
SW5V ALG
T
S
R
Q
P
O
N
M
L
K
J
I
H
G
F
E
D
C
B
A
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M

L

K

J

I

H

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E

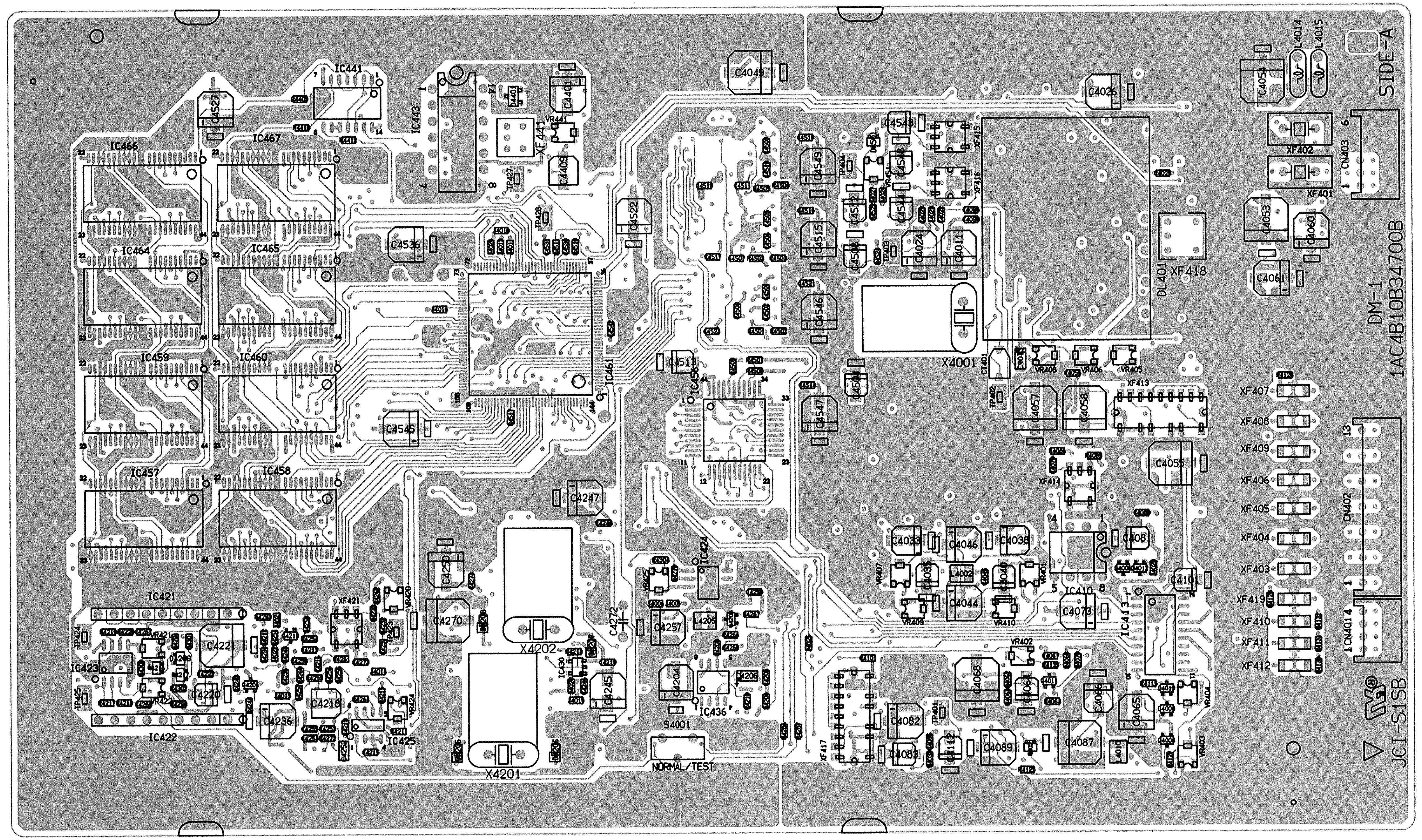
D

C

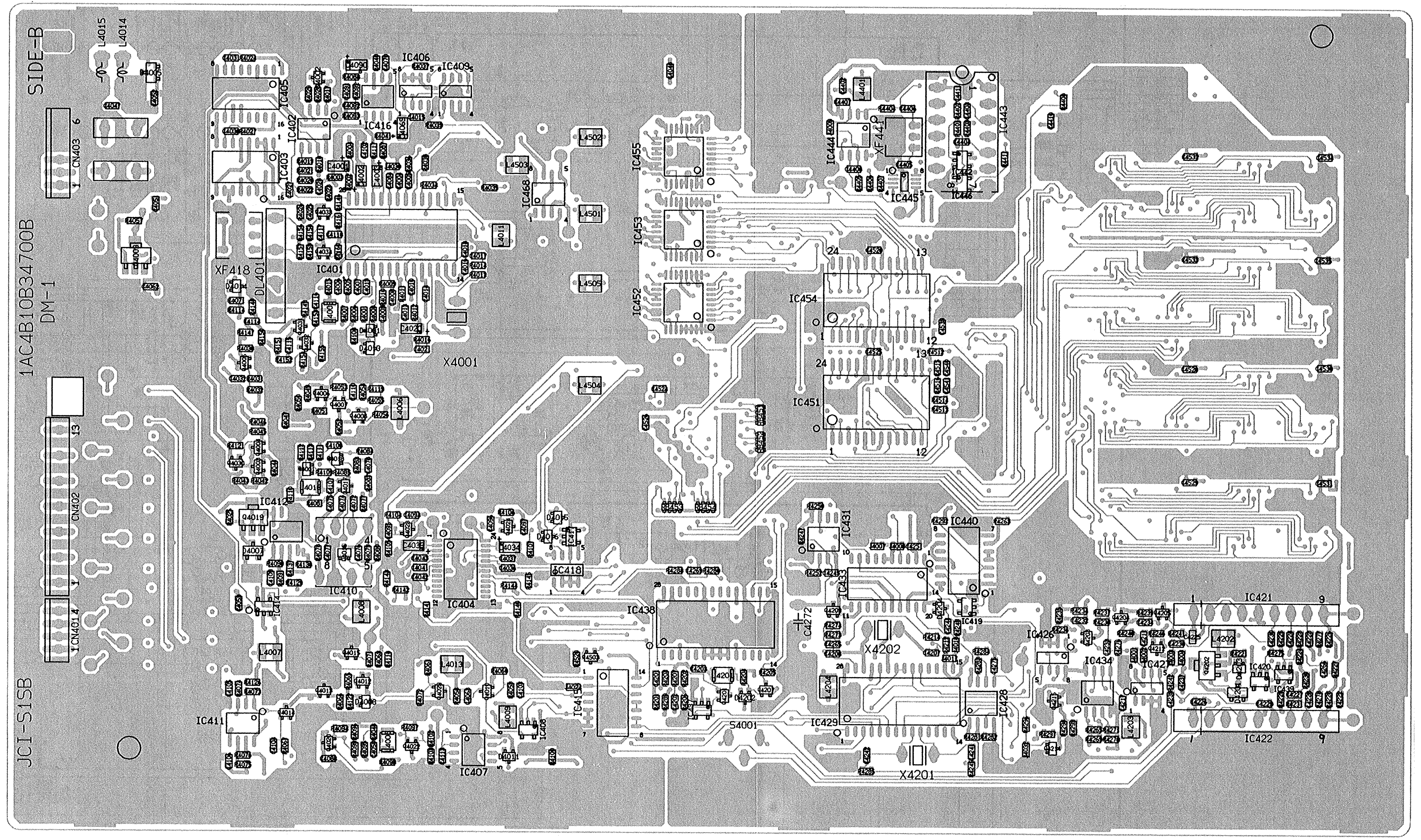
B

A

9-40. DM-1 P.W.B. BOTTOM SIDE FOIL (GVR-P04) (OPTION BOARD)


SIDE-A
DM-1
1AC4B10B34700B
JCI-S1SB
IC441
IC443
IC466
IC467
IC464
IC465
IC459
IC460
IC457
IC458
IC421
IC422
IC461
DL401
XF418
X4001
X4202
X4201
S4001
NORMAL/TEST
CN403
CN402
CN4014
XF401
XF402
XF403
XF404
XF405
XF406
XF407
XF408
XF409
XF410
XF411
XF412
XF413
XF414
XF419

9-41. DM-1 P.W.B. TOP SIDE FOIL (GVR-P04) (OPTION BOARD)


SIDE-B
1AC4B10B34700B
DM-1
JCI-S1SB
CN403
CN402
CN4014
IC406
IC408
IC401
IC455
IC453
IC452
IC454
IC451
IC443
IC444
IC445
IC446
IC412
IC410
IC404
IC418
IC438
IC440
IC431
IC428
IC429
IC411
IC407
IC415
IC421
IC422
IC434
IC426
XF418
DL401
X4001
X4202
X4201
S4001

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34

SPECIFICATIONS

Video

S/N ratio	Norminal	53 dB	S-VHS	100 KHz – 6.0 MHz WTD.
			VHS	100 KHz – 5.0 MHz WTD.
			Weighting filter : CCIR REPORT 410-1	
Horizontal resolution	More than	400 lines	S-VHS	
		240 lines	VHS	
Input	BNC	1.0 Vp-p, 75 ohms		
	S-Y	1.0 Vp-p, 75 ohms		
	S-C	0.3 Vp-p, 75 ohms		
	EXT. SYNC.	0.5–4 Vp-p, 75 ohms Composite sync. or Composite video		
Output	BNC	1.0 Vp-p, 75 ohms		
	S-Y	1.0 Vp-p, 75 ohms		
	S-C	0.3 Vp-p, 75 ohms		
	EXT. SYNC.	0.5–4 Vp-p, 75 ohms Composite sync. or Composite video (The ADVANCED/LOOP THROUGH switch: LOOP THROUGH position)		
		2 Vp-p, 75 ohms Composite sync. (The ADVANCED/LOOP THROUGH switch: ADVANCED position Only with the optional time base corrector unit (GVR-P04) installed in the VCR.)		

Audio

S/N ratio	Nominal	40 dB	Normal
D-range	More than	90 dB	Hi-Fi
Frequency response	50 ~ 12,000 Hz		Normal
	20 ~ 20,000 Hz		Hi-Fi
Input level	LINE	–8 dBs, 47 kohms	
	MIC	–60 dBs, 10 kohms	
Output level	LINE	–8 dBs, 2 kohms	
Wow-flutter	Less than	0.40%	DIN WTD

Time Code

Input level	1 Vp-p, More than 10 kohms
Output level	1 Vp-p, Less than 2 kohms

General

Video format	VHS/S-VHS Europe standard
Television system	CCIR: 625 line, PAL colour signals
Tape speed	23.39 mm/sec (SP)
Operating temperature	5–40°C (41–104°F)
Operating humidity	35–80%

Other Specifications

Power requirements	220–240 V AC, 50 Hz
Power consumption	44 watts
Dimensions (W x H x D)	460 mm x 125 mm x 415 mm
Weight (approximate)	8.6 kg
	8.9 kg --------- with optional control unit (GVR-P07)
	9.5 kg --------- with optional control unit (GVR-P07) and optional time base corrector unit (GVR-P04)

The manufacturer reserves the right to modify product designs and specifications without notice and without incurring any obligation.

SANYO

SANYO Electric Co., Ltd
Osaka, Japan

Aug./'95/1000 SU Printed in Japan